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THE DIAGNOSIS OF PATENT FORAMEN OVALE IN CASES OF CONGENITAL PULMONARY STENOSIS, INCLUDING ONE CASE OF LEVOCARDIA

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MOST instances of congenital pulmonary stenosis are associated with other defects, particularly those which comprise the tetralogy of Fallot, namely, interventricular septal defect, dextroposition of the aorta, and hypertrophy of the right ventricle. Pulmonary stenosis with intact interventricular septum, often designated "pure" or "isolated" pulmonary stenosis, occurs less frequently than the tetralogy, but is not rare. In Abbott's series of one thousand cases of congenital heart disease^{1, 2}, there were 85 cases of pulmonary stenosis associated with a defect in the interventricular septum and 25 cases of pulmonary stenosis with an intact interventricular septum.

A fact not generally appreciated is that a large percentage of cases of pulmonary stenosis with intact interventricular septum is associated with patent foramen ovale. Of Abbott's 25 cases of pulmonary stenosis with closed interventricular septum, 16 were in this group. In a similar series of 11 cases reported by Currens, Kinney, and White³, 6 had a patent foramen ovale. There are other recent reports of such cases.^{4, 5, 8, 9}

In the literature^{3, 4} cases of pulmonary stenosis with intact interventricular septum are often called "isolated" or "pure" pulmonary stenosis, regardless of whether the foramen ovale is patent or not. The latter is not only significant from the physiological but also from the therapeutic point of view because cases of pul-

monary stenosis with intracardiac shunt resulting in cyanosis may be amenable to amelioration by the Blalock⁶ or Potts⁷ procedures, whereas cases of truly isolated pulmonary stenosis are at present not thus remediable. The recent articles of Seltzer, et al.⁸ Allenby and Campbell⁹, and Burchell and Wood²⁰ have served to clarify the clinical significance of a patent foramen ovale in conjunction with pulmonary stenosis.

The diagnosis of these cases is further complicated by the fact that the tetralogy of Fallot also is frequently accompanied by a patent foramen ovale. Of Abbott's 85 cases of pulmonary stenosis with interventricular septal defect, 34 were in this group. Cournand¹⁰ also has found by cardiac catheterization that a physiologically significant interatrial septal defect not infrequently complicated the tetralogy. However, when an interatrial septal defect and pulmonary stenosis are present, the presence, in addition, of an interventricular septal defect or overriding aorta can be determined only when the cardiac catheter passes from the right ventricle into the aorta or when the right ventricular blood has a significantly higher oxygen content than the right atrial blood.¹¹

Recently we studied three patients with pulmonary stenosis and interatrial septal defect by means of angiocardiology¹² and cardiac catheterization¹³, in addition to the usual clinical procedures. In one case the diagnosis was confirmed by autopsy. In the last two cases, the difficulty in excluding an over-riding aorta is emphasized. Finally, the last case is one of the few

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cases of levocardia in which the diagnosis has been established during life.

CASE I

V. B., a 2-year-old girl, was admitted to the hospital January 7, 1948, because of increasing cyanosis during the previous six months. At the age of one month, the infant choked during her feedings. She was considered to have an enlarged thymus and radiotherapy was administered with relief of symptoms. At the age of 12 months, a cardiac murmur was heard, but no cyanosis was evident. She had an attack of "croup" at this time. At the age of 17 months, cyanosis and easy fatigability were noted. At the age of 20 months pronounced cyanosis of the fingers and toes was present.

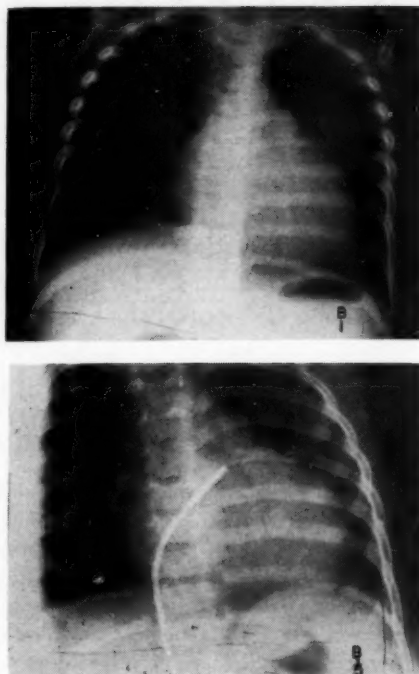
Physical examination showed an underdeveloped infant with deep cyanosis of the lips, fingers and toes, and clubbing of the fingers and toes. The precordium bulged at the left of the lower sternum. No thrill was palpable. A long, loud, harsh systolic murmur, heard over the entire precordium, was loudest to the left of the manubrium. The second pulmonary sound was louder than the aortic. An auricular sound was heard. Blood pressure was 104/72 in the right arm and 98/78 on the left. The peripheral pulses were of good amplitude.

The electrocardiogram revealed right axis deviation and inversion of T-2 and T-3. The precordial and unipolar limb leads were indicative of right ventricular hypertrophy. The phonocardiogram confirmed the presence of a long systolic murmur, with more high than low frequencies, to the left of the manubrium.

Fluoroscopy showed the heart to be enlarged towards the left due to right ventricular enlargement. The main pulmonary artery and the hilar branches were small (Fig. 1). The aortic knob was normal. There was no deviation of the barium filled esophagus.

Cardiac catheterization and angiocardiology were performed on January 14th, 1948. Under sodium pentobarbital-avertin anesthesia, the right saphenous vein was isolated, and the catheter passed easily up the inferior vena cava through the right atrium into the right ventricle. At the region of the pulmonary valve, however, the catheter met with an obstruction and could not be passed into the pulmonary artery. Attempts to aspirate blood through the catheter in this position were unsuccessful. Slight withdrawal of the catheter enabled the operator to aspirate blood from the outflow tract of the right ventricle. Blood was later taken from a ventricular site closer to the tricuspid valve. The catheter tip was withdrawn into the right atrium and again advanced. It was again observed to move towards the left but at a more cephalad level than previously when the right ventricle was entered. The tip of the catheter reached the

Figure I. Case I.



Upper—conventional postero-anterior view.

Lower—tip of catheter in left atrium having passed through an interatrial septal defect (oxygen content in left atrium 12.4 volumes per cent, in right atrium 8.5 volumes per cent.

left cardiac border below the prominence of the pulmonary artery (Fig. 1) and then curved caudally along this border for a short distance beyond which it could not be manipulated. The opinion was that the left atrium had been entered through a defect in the interatrial septum. This was confirmed by the oxygen determinations on the blood samples (Table I, Column 1) and by the angiocardiology. A sample of blood obtained from the right femoral artery on the following day (Table I, Column 1) showed only 57% saturation with oxygen.

Angiocardiology (Fig. 11) demonstrated diodrast in the left atrium simultaneously with initial visualization of the right atrium. Only two cardiac systoles occurred between the latter and opacification of the aorta. The right ventricle was dilated as was the pulmonary artery. It was impossible to determine if diodrast had reached the aorta by traversing the left atrium and the left ventricle or from the right ventricle by way of an overriding aorta.

The child finally lapsed into coma and died, apparently from anoxia on January 23, 1948.

At post mortem examination the heart was found to be at least double the expected weight

TABLE I
OXYGEN CONTENT AND SATURATION OF BLOOD OBTAINED BY
CARDIAC CATHETERIZATION

	CASE I		CASE II		CASE III	
	O ₂ Content Volume %	% Satn.	O ₂ Content Volumes %	% Satn.	O ₂ Content Volumes %	% Satn.
Superior Vena Cava....	—	—	10.1	58	7.2	40
Inferior Vena Cava	9.2	49	—	—	—	—
Right Auricle	8.2	43	—	—	7.0	—
					4.8**	27**
Right Ventricle	8.8	47	8.7	50	6.4	36
	8.5	45			(1.1)***	(6)***
Left Auricle	12.4	66	16.9	98	—	—
Pulmonary Vein	—	—	17.1	99	—	—
Brachial or						
Femoral Artery	10.8*	57*	15.7	91	11.4	64

* Arterial blood drawn on day after catheterization.

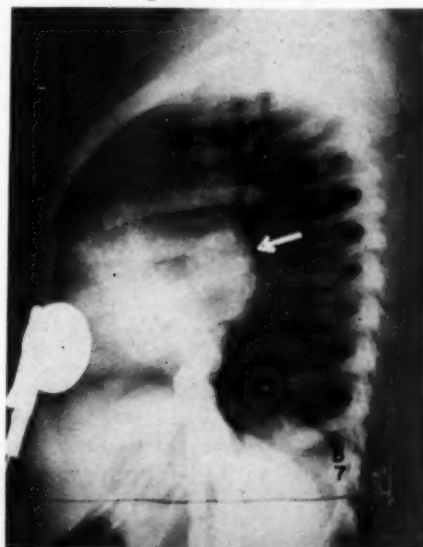
** This was the sample in which an abrupt color change was visible while it was being withdrawn.

*** Probably coronary sinus.

It was enclosed in a well developed pericardial sac, with no increase in pericardial fluid. The inferior and superior venae cavae were dilated. The right atrium and its appendage were greatly dilated and hypertrophied. The thickness of the right ventricle was 0.6 cm. The tricuspid valve was very large but well formed, and had a circumference at its base of 4. cms. The pulmonary valve was an almost solid membrane, 1.2 cm. in diameter, whose cusps were completely fused except for an ostium 2 mm. in diameter at the center of the membrane. This constituted the only intracardiac orifice through which blood could pass from the heart to the lungs. The pulmonary artery and its branches were thin and considerably dilated above the valve. The completely obliterated ductus arteriosus was in its usual situation about 3 cm. above the ventricles. The pulmonary veins were not dilated and emptied into a small left atrium. The mitral valve was well formed and had a circumference of 4 cm. The left ventricle was hypertrophied

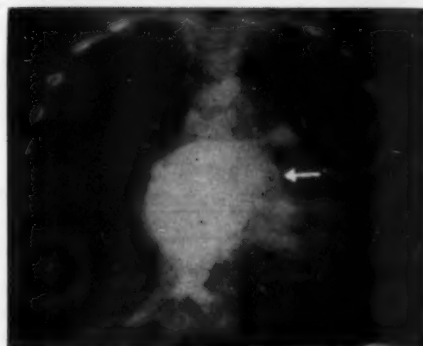
with a muscle thickness of 0.5 cm. A patent foramen ovale measured 1 cm. in diameter. The aortic valve was not unusual. The aorta itself was well formed and of uniform caliber though somewhat dilated. The coronary arteries orig-

Figure II. Case I.



Upper—left oblique angiogram, showing simultaneous visualization of the atria and aorta. The arrow points to the left atrium.

Lower—postero-anterior angiograms. The arrow on the right indicates diodrast in the left atrium visualized simultaneously with the right atrium. The arrow on the left points to dilated pulmonary artery.



inated at the usual locations and were normal in size. The lumina of the bronchial and intercostal arteries were not more than 1 mm. in diameter. The ribs showed no notching. The azygos vein was 3 mm. in diameter and was distended with blood. Pronounced endocardial fibrosis was found in the outflow tracts of both ventricles and in the right atrium. The lungs showed areas of focal congestion.

There was superficial infection in the operative wound. The inferior vena cava and its tributaries from the right thigh were carefully exposed and explored to and below the site of previous surgical exposure of the saphenous system. No thrombi were found and blood could be expressed freely from the iliac and femoral veins. No evidence of thrombophlebitis or abscess was found.

COMMENT

This case is a classical example of the valvular type of pulmonary stenosis with patent foramen ovale. There were no other defects. A noteworthy feature was the acyanotic period early in life followed by the appearance of, and fairly rapid increase in, cyanosis. The diagnosis of an interatrial septal defect was established during life, first, by the passage of the catheter from the right atrium into what was interpreted to be the left atrium; second, by the finding that the blood oxygen content in the latter region was higher than in the right atrium; and, third, by the angiocardigraphic demonstration that the area reached by the catheter was indeed the left atrium which was visualized directly after diodrast was recognized in the right atrium and before the pulmonary vessels were opacified.

The low blood oxygen saturation in the left atrium (66%), though higher than that in the right atrium, also suggested interatrial right-to-left shunt and consequent admixture of venous and arterial blood in the left atrium since there was no reason to suspect incomplete oxygenation in the lungs. How completely oxygenation occurred in the lungs was not investigated during life, but at the post mortem examination there was no microscopic evidence of pulmonary vascular disease. It is doubtful that the areas of focal congestion in the lungs were sufficiently extensive to have caused the high degree of unsaturation of the left atrial blood.

In this connection, patient No. 8 of Brannon, Weens, and Warren¹⁴ is of interest. In their patient, a 39-year-old man, who had developed cyanosis and polycythemia, the presence of an interatrial septal defect was established when cardiac catheterization showed the blood oxygen content

in the right atrium (12.4 Volumes per cent) to be considerably higher than that in the superior vena cava (7.9 volumes per cent). Arterial oxygen saturation was only 67 per cent. The observations that oxygen inhalation increased the saturation to 88 per cent and that some of the pulmonary branches showed a "moderately increased pulsation, whereas others had practically no pulsatory volume changes," led them to postulate the coexistence of intrapulmonary vascular disease. Post mortem examination confirmed their conclusions.¹⁵ This case illustrates how increased blood flow to the lungs may lead to secondary pulmonary changes. That decreased blood flow may also lead to alterations in the pulmonary vessels has recently been shown by Rich¹⁶ who found intravascular thrombi in cases of tetralogy.

The dilatation of the pulmonary artery, demonstrated by angiocardigraphy, is interesting since it is likely that the pulmonary artery pressure was low. The latter is suggested by the absence of forceful pulsation during fluoroscopy and by the autopsy findings. Post-stenotic dilatation of the pulmonary artery apparently is the rule in cases of "isolated" pulmonary stenosis.

Early visualization of the aorta, approximately simultaneously with the pulmonary artery ordinarily indicates an overriding aorta and interventricular septal defect. However, similar early visualization of the aorta will occur when diodrast passes through an interatrial septal defect into the left atrium, and from there, through the left ventricle to the aorta. Any slight difference in the transit time that might occur is not likely to be recognized because even the recently improved angiocardigraphic method¹² is not precise enough to detect slight variations. This difficulty also arose in connection with case III. Indeed it is resolved conclusively only if the catheter is seen to enter the aorta from the right ventricle.

In Eisenmenger's complex, where dilatation of the pulmonary artery coexists with dextroposition of the aorta, the demonstration of at least adequate blood flow through the lungs (normal or increased pulsations in the hilar vessels, increased pressure in the pulmonary artery, the absence of pulmonary stenosis) serves to differentiate this condition from cases in which pulmonary stenosis is present.

Finally, when the oxygen content of blood

from the right ventricle is not significantly higher than the blood from the right atrium, as occurred in this case, it is unlikely that an interventricular defect and the tetralogy are present since according to Bing,¹¹ a significant oxygen difference is usually found in the tetralogy of Fallot.

CASE II.

S. F., a 3½-year-old boy, was admitted to the hospital on April 19, 1948, for investigation because of a heart murmur. The murmur first had been heard at the age of 10 days. He had never been cyanotic. He led a full and active life with no symptoms, except that he became a "little winded" on exertion.

Physical examination showed him to be well developed and well nourished. Clubbing and cyanosis were absent, as were signs of congestive heart failure. The point of maximal impulse of the heart was in the fifth intercostal space at the mid-clavicular line. A very loud, rough systolic murmur was heard all over the precordium and posteriorly throughout the chest. It was maximal in the pulmonary area. A systolic thrill was present over the precordium and over the carotid arteries. Blood pressure was 130/80 in

the left arm, 140/110 in the left leg. The hemoglobin was 12.5 grams per 100 c.c. of blood.

The electrocardiogram showed right axis deviation in the standard leads. The unipolar limb leads and the precordial leads were indicative of right ventricular preponderance. The phonocardiogram confirmed the holosystolic murmur to be maximal at the pulmonary area with transmission to the left subclavicular area. The carotid pulse tracing showed a few systolic vibrations late in the flow phase, corresponding in time to the thrill. The radial and femoral pulses were simultaneous in their onset.

Fluoroscopy revealed the heart to be of normal size. (Fig. III, 1.) The pulmonary artery segment and the secondary branches of the pulmonary artery were normal in appearance, but in the teleoroentgenogram the pulmonary artery appeared prominent. There was no definite evidence of right ventricular enlargement. The barium-filled esophagus was not displaced.

Cardiac catheterization and angiocardiology were performed on April 21, 1948 under sodium pentobarbital-avertin anesthesia. Through the right saphenous vein, the catheter was passed into the right ventricle but it could not be passed into the pulmonary artery. It was then withdrawn into the right atrium and directed for-

Figure III. Case II.



1. Conventional postero-anterior view.



2. Catheter in the left pulmonary vein.



3. Angiocardiogram, showing both atria filled with diodrast. The arrow points to the left atrium.



4. Angiocardiogram, showing visualization of the right ventricle and pulmonary artery. The arrow points to the narrowed outflow tract of the right ventricle.

ward again. It progressed across the cardiac shadow to the left and the tip of the catheter was seen to project outside the left cardiac border into the left pulmonary field. The interpretation was that the catheter had traversed a defect in the interatrial septum, and after crossing the left atrium had entered a pulmonary vein. This was confirmed by the results of the oxygen studies (Table I, Column II) and by angiocardio-gram.

The angiocardio-gram (Fig. III, 3 and 4) revealed narrowing of the outflow tract of the right ventricle below the pulmonary valve. The pulmonary artery was slightly dilated. An interatrial septal defect was indicated by early visualization of the left atrium.

COMMENT

Although the anatomical diagnosis in this case was the same as that in Case I, but with infra-valvular stenosis, the clinical contrast between them was striking. Indeed the two cases may be considered to represent opposite extremes in severity. The pulmonary stenosis in Case II was functionally so mild that the right atrial and ventricular pressures caused no cyanosis and minimal right-to-left intracardiac shunt. It is unfortunate that facilities for satisfactory pressure recordings during catheterization were not available when this patient was examined. Pressure readings may be important since, as Burchell and Wood²⁰ point out, in this condition the right ventricular systolic pressure is likely to be elevated and may greatly exceed a simultaneously-determined systemic arterial systolic pressure. The presence of a right-to-left shunt was established in this case, despite the absence of cyanosis, by the finding that the blood oxygen content and saturation were lower in the femoral artery than in the left atrium and pulmonary vein. The difference, though relatively small, was significant. Furthermore, the absence of any significant left-to-right shunt was evident from the fact that the right ventricular blood oxygen content was not higher than the caval. (Unfortunately, the right atrial sample clotted.) The presence of an interatrial septal defect was established according to the criteria as in Case I. Subvalvular pulmonary stenosis was clearly evident on the angiocardio-gram.

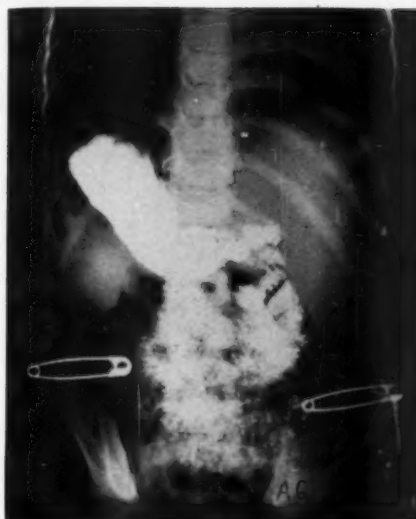
The presence of a palpable thrill over the carotid arteries is worth emphasis. Apparently, in pulmonary stenosis, a murmur and thrill may be transmitted to the neck in the absence of the left ventricular outflow obstruction usually associated with this transmission.

CASE III

A. G., a 3-year-old girl of Italian extraction, was admitted to the hospital on June 14, 1949. Her mother had "rheumatic heart disease" since the age of 13. The child had been cyanotic since birth, developed clubbing early, and had moderate exertional dyspnea. Her physical and mental development were normal, but she had never run. Examination showed her to be cyanotic, in no distress at rest. Clubbing of the fingers and toes was present. The cervical veins were not distended. The lungs were clear. The apex impulse of the heart was palpable in the 4th left interspace within the nipple line. Percussion demonstrated slight enlargement of the heart to the right and left. A grade III systolic murmur was heard best in the 3rd interspace to the left of the sternum, transmitted to the apex and base. The second aortic sound was louder than the second pulmonic sound, which was faint. The blood pressure was 140/80. The spleen was palpable beneath the right costal margin. Blood count showed a hemoglobin of 18 grams per cu. mm., an erythrocyte count of 7.8 million, and an hematocrit of 71 per cent. With the patient crying, blood obtained from a femoral artery showed an oxygen content of 12.0 volumes per cent, an oxygen capacity of 21.4 volumes per cent, and a percentage saturation of 57.1 per cent. Electrocardiogram showed a sinus tachycardia of 190 per minute; marked right axis deviation; high, wide, notched P waves; and QRS complexes of high voltage. The P and T waves were upright in Lead I. Conventional postero-anterior roentgenograms of the chest showed the cardiac shadow to be enlarged especially towards the left (Fig. 4). The aortic shadow was seen to the right of the mid-line and a vascular shadow was present in the paramediastinal region on the left side extending to the root of the neck. A curved prominence high on the left border of the heart was interpreted as a dilated left auricular appendage. The gastric air bubble was seen just below the right diaphragm and a homogeneous density presumably that of liver was present below the left. The pulmonary vascular markings as seen in the postero-anterior projection were not distinctly abnormal in appearance. However, in the oblique projections the main pulmonary vessels and the hila were diminished in size.

Angiocardio-gram carried out through the right upper extremity showed the right superior vena cava to be normal in caliber (Fig. 5). Its upper half was displaced laterally and its lower portion coursed obliquely to the left to enter the right atrium considerably to the left of the normal position. The inferior vena cava entered the heart to the left of the mid-line. The hepatic venous circulation was well delineated and appeared to terminate in a large vessel, as wide as the inferior vena cava. One-half second after

Figure IV. Case III.



Upper left: Conventional postero-anterior roentgenogram showing increased width of the superior mediastinum to left and right; prominent right atrium and a prominent curve of the left upper cardiac contour. Note the stomach bubble on the right.

Upper right: Shows the stomach to be in a mirror-image position.

Lower: Barium enema demonstrating most of the large bowel on the right.

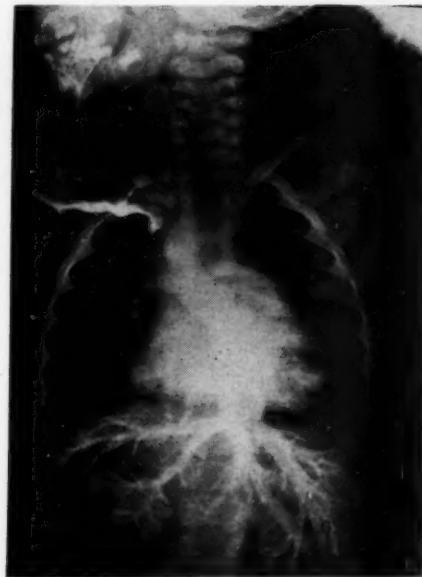
the initial appearance of diodrast in the right atrium, with the heart rate at 150 per minute, diodrast was present in small quantity in the left atrium and left ventricle as evidenced by faint mottling in the region of these chambers. Immediately following, the left atrium and its appendage were outlined in the usual position and the latter corresponded to the prominence seen in the upper part of the left cardiac border. The aorta arose in part at least from the right ventricle and the arch was seen to be on the right side. The main pulmonary artery was not visualized as such but the right and left branches appeared small. The aorta descended on the right side in the thorax and in the abdomen was still on the right side as far as the 2nd lumbar verte-

bra. There was a left innominate artery and possibly another innominate on the right.

Barium meal examination showed the esophagus to traverse the thorax slightly to the left of the mid-line. At D-11 it crossed over to the right where it entered the stomach. The antrum pointed toward the left side and the duodenal bulb was on the left. The liver was identified on the left and the spleen on the right. Barium enema was not entirely satisfactory but demonstrated the sigmoid and the descending colon to be to the right of the mid-line. Only a portion of the transverse colon extended to the left of the mid-line. The cecum, however, appeared to be in the right lower quadrant.

On June 29, cardiac catheterization was performed through the right saphenous vein. The catheter entered the heart through an inferior vena cava to the left of the mid-line, confirming the angiocardiographic demonstration. The right atrium, left atrium, and a right pulmonary vein then entered in this order. The catheter also entered a vessel which extended superiorly to the left of the mid-line, evidently a left superior vena cava. The catheter could not be passed into the ventricles or pulmonary artery. The pressures and oxygen contents of the blood from the various locations were as follows:

Figure V. Case III.



Upper left: Angiocardiogram showing the superior vena cava, indented on its left by a right-sided aortic arch and curving mesially before entering the heart; retrograde filling of inferior vena cava and hepatic circulation and partial filling of both atria.

Upper right: Succeeding angiocardiogram showing opacification of the left auricular appendage and right-sided aortic arch.

Lower left: Catheter in left superior vena cava.

Lower right: Catheter in a right pulmonary vein.

COMMENT

This case is an example of so-called levocardia, i. e. situs inversus of the abdominal viscera with the heart in its normal left-sided position. It is the mirror image of isolated dextrocardia. Recently, Forgaes¹⁷ and Donzlet, et al.¹⁸ have presented cases of levocardia diagnosed clinically and have reviewed the literature. Forgaes has pointed out that, in contrast to complete situs inversus, the heart is invariably abnormal in this condition and the structural defects are apt to be complex. In the majority of instances, trans-

	O ₂ content vol. %	mean pressure	pulse pressure
Left superior vena cava....	12.1	0	—
Inferior vena cava	14.2	0	—
Right atrium	13.2	-2	2
	12.5		
Left atrium	13.1	-2 to +2	4
Right pulmonary vein	22.5		
	19.5	4	—

position of the atria, a common atrium, or a large interatrial communication, but especially the first named anomaly, was present in addition to other abnormalities. In our case, the venae cavae were shown to enter the heart to the left of the normal position, but still apparently into the right atrium. A huge interatrial septal defect may be postulated because of the low oxygen saturation of the blood in the left atrium. There must have been some separation of the two atria, however, since the pressure was shown to be distinctly greater on the left than on the right. The failure to visualize the main pulmonary artery on angiocardiology indicates a probable pulmonary stenosis. The early visualization of the aorta may have occurred as a result of the mixing of the venous and oxygenated blood in the atria or may indicate in this case, in addition, an overriding aorta and interventricular septal defect. The fact that the aorta is right-sided and displaced to the right favors the latter possibility.

DISCUSSION

In the literature, the term "isolated" or "pure" pulmonary stenosis is often used indiscriminately to include all cases in which there is an intact interventricular septum. It is apparent, however, that cases in which pulmonary stenosis is the only lesion differ physiologically from those in which there is, in addition, intracardiac shunt through an interatrial septal defect. Clinically, these two conditions are similar in some respects but differ greatly in others. Following are some of the clinical findings^{3, 4, 5}:

1. The murmur in both groups is apt to be best heard higher along the left sternal border and appears to originate "closer to the ear" than in the tetralogy of Fallot.

2. When "pure" pulmonary stenosis is present, i. e. when it is complicated by no other lesions, the oxygen saturation of the arterial blood is normal. Cyanosis, when present is usually mild and is a late development. It may become severe preterminally due to right-sided congestive heart failure. Dyspnea is frequently out of proportion to the cyanosis.¹⁰ When pulmonary stenosis is complicated by a significantly patent foramen ovale, cyanosis ultimately becomes severe and is accompanied by reduced arterial oxygen saturation resulting from right-to-left shunt and, possibly, associated pulmonary vessel changes.^{8, 9} Characteristically, however, it does

not appear until some time after birth. Taussig believes that patency of the ductus arteriosus accounts for the absence of cyanosis at least in the first month of life. Many infants succumb within the first two years of life, a few months after the first appearance of cyanosis. On the other hand, many patients live to adult life and the progression of cyanosis and polycythemia extends over years. These differences are in all probability related to the degree of pulmonary stenosis.⁴

3. In infants, enlargement of the heart to the right is more evident in pulmonary stenosis with intact interventricular septum than in the tetralogy, in which the heart may be normal in size for many years.

4. The pulmonary artery is frequently normal in size or dilated with "isolated" pulmonary stenosis but this is not common in conjunction with the tetralogy.^{8, 9}

5. A "right ventricular strain" pattern on the electrocardiogram, as opposed to simple right axis deviation, favors "isolated" pulmonary stenosis over the tetralogy of Fallot.⁵

The presence of an intracardiac shunt may be suspected in the presence of one or more of the following: reduced oxygen saturation of the arterial blood, reduction in the saturation of arterial blood with exercise, very short saccharin or calcium gluconate circulation time, and paresthesias in the extremities during the determination of the ether circulation time.

Despite the presence of several of the above findings the clinical diagnosis of pulmonary stenosis with or without an intracardiac shunt, may be difficult and differentiation from the tetralogy of Fallot, Eisenmenger's complex or other lesions may require cardiac catheterization and angiocardiology. Catheterization will support this diagnosis if the pulmonary artery can be catheterized. A lower pressure in the pulmonary artery than in the right ventricle will be found. If the catheter cannot be passed into the pulmonary artery after its tip has been directed into the outflow tract of the right ventricle, a high degree of stenosis may be present. However, as is well known, attempts at pulmonary artery catheterization may be unsuccessful where there is no reason to suspect stenosis.

Infundibular stenosis is usually associated with the tetralogy and is rare in conjunction with an intact interventricular septum. In the latter, the stenosis is usually valvular. Oppor-

tunity to correlate the angiocardigraphic visualization of the outflow tract of the right ventricle with post-mortem appearance has been too infrequent to say that angiocardigraphy unequivocally permits the differentiation of pulmonary valvular from subvalvular stenosis.

Early visualization of the left atrium in the angiocardigram strongly suggests the presence of interatrial septal defect. This finding was present in the cases being reported. Early opacification of the left atrium is unusual in cases of uncomplicated interatrial septal defect. Cardiac catheterization offers unequivocal evidence if the catheter tip enters the left atrium as in Cases I and II and the oxygen content of the blood sample from this area if found to be higher than in the samples obtained from the right atrium. If blood in the left atrium or in a peripheral artery is found to have a lower oxygen content than in the pulmonary vein, or is less than 95 per cent saturated with oxygen, a right-to-left shunt will be proven if no intrapulmonary disease is present.

It is not within the scope of this report to discuss in detail the indications for the recently devised operations to increase blood flow to the lungs.^{6,7} In this connection, however, we wish to emphasize the necessity for distinguishing between pure pulmonary stenosis and pulmonary stenosis with patent foramen ovale. Taussig¹ has pointed out that "it is doubtful whether the operation (Blalock's) will be of value in pure pulmonary stenosis because even though the obstruction at the pulmonary orifice were circumvented, there would still be difficulty in the expulsion of blood from the right ventricle and only oxygenated blood would be directed to the lungs." However, when pulmonary stenosis is associated with a physiologically significant patent foramen ovale, despite the presence of an intact interventricular septum, the following criteria for the operation¹¹ will in many instances be satisfied:

1. Presence of an interatrial or interventricular septal defect.
2. Obstruction to flow in the pulmonary artery resulting in a mean blood pressure in the pulmonary artery which is less than that in the aorta and its branches.
3. Oxygen saturation of peripheral arterial blood less than 88 per cent.

It remains, of course, to be determined by further experience whether or not the operation

will be as successful in cases of the type described in this paper as it has in the tetralogy of Fallot.

SUMMARY

1. Three cases of pulmonary stenosis and interatrial septal defect, one proven at autopsy and one complicating levocardia, are presented.
2. The value of angiocardigraphy and cardiac catheterization in the differential diagnosis of this combination of lesions is discussed.
3. The practical need of differentiating pure pulmonary stenosis from pulmonary stenosis with physiologically patent foramen ovale, both with intact interventricular septum, is emphasized particularly with regard to possible surgical amelioration.

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DIBUTOLINE - A USEFUL ANTISPASMODIC

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PAIN associated with smooth muscle spasm from whatever cause, has always been a source of distress to both the patient and the doctor. This is evidenced by the myriad of antispasmodic drugs and various types of sedatives that have flooded the market in recent years. Biliary colic, ureteral colic, spasm and pain caused by duodenitis or duodenal ulcer, and by far the most common source of distress, the garden variety of spastic colon, has led many investigators into the field of research pertaining to the relief of painful spasm.

In recent months we have had an opportunity to work with a new type of antispasmodic drug that has been reported in literature since 1943.^{2, 3, 4, 5, 6} It was first mentioned as being an effective cycloplegic and midriatic agent, but in 1945 it was reported as being of help in the treatment of smooth muscle spasm.^{7, 8} The name of the drug is dibutoline (dibutyl urethane of dimethyl ethyl-B-hydroxy ethyl ammonium sulfate, Merck and Company, Inc.). In our experience, this drug has proven to be a useful adjunct in the treatment of a source of pain associated with smooth muscle spasm, especially in cases where other antispasmodic drugs have not been satisfactory.

Pharmacology

Spasm of smooth musculature is caused by stimulation of post-ganglionic, cholinergic nerve fibers that innervate the individual muscle groups. Such spasm can be initiated by a mechanical or a chemical irritation, infection, or by psychic tension as seen in mental distress or worry. Pain is a direct result of this spasm. Dibutoline acts as a blocking agent and inhibits the structures that are innervated by these nerve fibers and thus spasm is prevented.^{7, 8} It blocks the usual response of the cells and, therefore, it relaxes the iris constrictor in the ciliary muscle, inhibits the sub-maxillary gland, and relaxes smooth muscles in the arterioles and the gastro-intestinal, biliary, and urinary tracts.^{7, 8, 9} Moreover, dibutoline exerts a direct inhibitory action on non-striated musculature as shown by its action on isolated animal intestines.⁸ The site

of the action is directly on the effector cells and not on the nerve endings. In this way it acts similar to atropine. In comparing dibutoline with atropine, it is found that the effect of dibutoline lasts a relatively shorter time than does the effect of atropine, but prolonged effects without toxicity are obtained with higher dosages. Moreover, it has been found that the effects of dibutoline occur more quickly than those of atropine and a more intense action is effected. In addition, the side effects, such as pupil dilatation and mouth dryness, are less severe.^{8, 9, 10, 11, 12}

Toxicity

Animal experimentation has shown that the drug has a remarkably low toxicity. It was shown that when dibutoline was given intravenously, experimentally in large doses, there was a transitory decrease in blood pressure and a slight drop in the pulse rate, but cardiac irregularities were absent.⁸ There was no influence either on the amplitude or the rate of respirations with ordinary doses; however, massive doses given intravenously did cause some slight increase in respiratory rate. It was observed that the amounts of dibutoline that was required to obtain a response from the cardiovascular system were of a higher order than those which were effective upon gastro-intestinal musculature. Thus, it was shown that 1000 times the minimal effective dosage, for inhibiting intestinal motility and tone, may be given without causing serious or dangerous side effects in animals.^{7, 8, 9}

In our experience only two patients showed evidences of circulatory effect. One was a young woman who had had gastro-intestinal bleeding from a duodenal ulcer. She was weak from loss of blood and in a state of semi-shock when first seen. She was suffering from a great deal of abdominal cramping and pain that had not been relieved by atropine or demerol. Consequently, an initial dosage of 10 mg. of dibutoline was administered subcutaneously. Approximately two minutes after the injection the patient became extremely pale and there was a drop in her blood pressure and an increase in her pulse rate which in turn became weak and

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thready. The patient remained in a state of circulatory collapse for approximately two to three minutes, but recovered fully following the administration of three minims of adrenalin.

The other patient was an elderly woman who had received dibutoline prior to barium enema studies in order to relieve the spasm of the lower bowel. Approximately one to two minutes following the subcutaneous injection of 10 mg. of dibutoline, the patient exhibited a state of circulatory collapse but recovered within three to five minutes. It was assumed that dibutoline was the causative factor in each case. No permanent effects were noted in either patient. The chief side effects noticed during the administration of this drug are dryness of the mouth and dilation of the pupils with defective visual accommodation in some patients. However, we have found that with the reduction of the dosage from 10 mg. to 5 mg. the side effects have been minimal.

Administration and Dosage

As an antispasmodic, dibutoline may be injected intramuscularly or subcutaneously. The usual subcutaneous dose for adults is 10 mg. or 1 c.c. If no relief is obtained in 15 to 20 minutes, the 10 mg. dosage may be repeated. The drug appears to be ineffective when given by mouth.^{11, 12} Intravenous administrations have been avoided, in view of the fact that circulatory collapse has been reported in animals when it is given in this manner. Because of the low toxicity of the drug, the physician has considerable latitude in determining the dosage for his patient, and the individual dosages can be worked out for the individual patient. Duration of the action of the drug varies from thirty minutes to one or two days. In cases of severe pain and critically ill patients initial dosages have been as high as twenty to thirty milligrams. Sustaining dosages range from 10 to 20 milligrams four times a day for several days to weeks. No ill effects have resulted from these prolonged dosages, in our experience.

Stability

Solutions of dibutoline may be stored at room temperature for periods of at least one year without precipitation, change of color loss of potency, or any other evidence of instability.

Observations on the Use of Dibutoline Clinically

Diseases of the gastro-intestinal tract. In gas-

tritis and duodenitis, not associated with ulcers, a total of fourteen cases were treated with dibutoline. There was complete relief from pain in nine, partial relief in two, and no relief in three cases. Symptoms consisted of pain, with or without food, and bouts of associated nausea and vomiting. Drugs that had been used without much success included belladonna, atropine, and various antispasmodic preparations. The usual dosages and methods of injection were used and the duration of relief varied greatly. Some patients obtained relief for several hours from one injection of 10 milligrams; others required injections every three or four hours. Freedom from distress lasted only thirty minutes to one hour. In some patients relief lasted for as long as several days. There was complete subsidence of nausea and vomiting and cramp-like pain in all cases.

Gastric Ulcer.—Four cases of gastric ulcer were treated with this medication. Of the four only one was completely relieved of distress, two were partially relieved, and one received no relief at all.

Duodenal Ulcer.—Twenty-four cases of duodenal ulcer were diagnosed by X-ray studies. Of these people fourteen received complete relief following a dietary regime plus interval injections of dibutoline, six received partial relief, and four seemed to notice no difference. In this series there were five patients whose pain could not be controlled by any other medication, and the relief in these cases was most gratifying. These people were given 10 mg. dosages every three or four hours, day and night, for the first two to three days, then the medication was gradually withdrawn, and, following relief, patients were placed on an ulcer regime with ordinary antispasmodic drugs.

Pylorospasm.—Ten cases of pylorospasm, with or without ulcer, were treated. Of the ten, eight received complete relief, two partial relief. Two of these cases formerly had been treated with a combination of demerol and atropine, with only partial relief, whereas they were completely relieved by dibutoline therapy.

Gastroenteritis (Acute).—Twenty-six cases of acute gastroenteritis, with nausea, vomiting, and watery diarrhea were seen. Sixteen of these patients received almost immediate complete relief with dibutoline alone, six partial relief, and four did not respond. One case of regional enteritis

was seen, and the patient obtained marked relief following injections every six hours. He had not received any relief previously from atropine, belladonna or demerol.

Diverticulitis.—Eight such cases were seen and treated over varying lengths of time. Five patients received complete relief and three partial relief from abdominal pain. These patients formerly had received atropine and belladonna and various antispasmodic drugs with less success. Several of these cases were maintained on this medication for as long as two weeks, with injections at regular intervals, with no ill effects and with complete subsidence of abdominal distress.

Ulcerative Colitis.—Three cases of ulcerative colitis were seen. Patients in two cases stated that they were greatly relieved from the cramping and watery diarrhea, which had not been controlled by atropine or the usual antispasmodic drugs. One patient received only partial relief.

Spastic Colon.—It was rather difficult to follow these cases, inasmuch as most of them were ambulatory; however, we were able to follow fourteen patients rather closely, ten of whom received complete relief following each injection. Length of time of relief varied from several hours to a day. Four received only partial relief, or at least the same type of comfort they had obtained from other antispasmodic drugs. Those who did receive help stated that it was much more satisfactory than the help they had received from many other type of medication.

Biliary Colic.—Sixteen such cases were seen and in ten of the patients the results were rather dramatic, one received partial relief and five received no relief whatsoever. In the successful cases, narcotics, atropine, and various other type of antispasmodic drugs were used to no avail. Several of the patients obtained no comfort from large doses of demerol; whereas, 10 to 20 mg. of dibutoline relieved their symptoms completely. In this series are included three cases of common duct stone, in which an attempt was made to force the stone to move following massive antispasmodic treatment. Two of these cases were successful, one was not. In one case, under fluoroscopy and diodrast, actual dilation of the duct was demonstrated.

Dysmenorrhea.—Ten cases of dysmenorrhea were treated. Five patients obtained complete

relief, five partial relief, and two noticed no effects. The patients who complained of premenstrual spasm were relieved almost immediately. Those who had pain and stress during the menstrual flow were not relieved. Two of the successful cases had been treated with narcotics and other powerful sedatives previously with no results.

Ureteral Colic.—Twelve cases were seen, seven with and five without stone. Five patients obtained complete relief, three partial relief, four no relief. Here again narcotics had been used unsuccessfully to obtain comfort, but in five cases the patient was made comfortable by the use of dibutoline alone.

The drug has also been used with success in post-cystoscopic spasms, and in bladder spasms. In all these cases there has been relief of pain.

There was one patient with a diaphragmatic hernia and resulting spastic pain who received rather dramatic relief following dibutoline injection.

Dibutoline was tried in the treatment of asthma without success.

The drug has proven to be useful to the roentgenologist in combatting spasm of the intestinal tract in X-ray visualization of the gastrointestinal tract.¹²

SUMMARY

We believe that dibutoline has proven to be a very effective addition to our armamentarium in the treatment of smooth muscle spasm. It has been of particular value in those cases where other antispasmodic medications and even narcotics have failed to effect relief, and although it is not a cure-all for nonstriated muscle spasm disorders, it has proven to be a very useful drug in this field. As seen in the outline under "Clinical Observations," relief has been dramatic and long-lasting in some cases; whereas, in other cases it has not. However, we feel that true spasm with associated severe colic and pain has been relieved in the majority of our cases in a gratifying manner. The action of the drug has been swift and at times long-acting. In many instances a single dose provides relief for a period which far exceeds the duration of pharmacological activity. This would indicate that in these cases, once a spasm is relieved, it does not recur immediately even though no drug is acting to prevent it.¹² There is a disadvantage to the mode of administration, inasmuch as it is inef-

fective other than by subcutaneous or intramuscular injection, which makes it rather inconvenient for both the physician and the ambulatory patient. However, in cases where the drug has proven to be of value over a long period of time following a single injection, this disadvantage is minimal.

We may summarize by saying that in our experience dibutoline has been a useful antispasmodic drug.

CONCLUSION

1. Dibutoline, a powerful antispasmodic agent with cholinergic nerve fiber blocking properties and smooth muscle inhibitory action, has been described.

2. It has been reported that the drug has remarkably low toxicity, and clinical observa-

tions of its use in various types of smooth muscle spasm disorders have been described.

3. The drug has proven to be of value in the treatment of pain caused by smooth muscle spasm and also has been reported as being of value in roentgenology.

4. There is a disadvantage to the mode of administration, inasmuch as the drug is ineffective when taken orally, but the relief afforded by the medication outweighs this disadvantage.

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Type of Spasm	Total Cases	Complete Relief	Partial Relief	None
Gastritis	16	10	2	4
Duodenitis				
Gastric Ulcer	4	1	2	1
Duodenal Ulcer	20	14	6	4
Pylorospasm	10	8	2	
Acute Gastroenteritis	26	16	6	4
Diverticulitis	8	5	2	1
Ulcerative Colitis	3	2	1	
Spastic Colon	14	10	4	
Biliary Colic	18	12	1	5
Ureteral Colic	12	5	3	4
Dysmenorrhea	10	5	3	2

PARIETO-COLIC MEMBRANES AND CHRONIC APPENDICITIS

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THE term "Parieto-colic membranes" as used in this paper will be limited to those accessory membranes or bands of the caecum, ascending colon and hepatic flexure, when the gut is normally rotated.

They are probably congenital in origin, although various opinions are prevalent, and aided in the support of the large bowel in the horizontal position when man walked on all fours; but which in the upright position produce constriction of the lumen, and intermittent partial obstruction with distension of the proximal

caecum, and with distress and nerve reflexes to other segments of the bowel.

The parieto-colic membranes of this area are divided into four main types—

1. The post operative adhesions, with which this paper is not particularly concerned.
2. Jackson's membranes, or veil, consisting of a broad filmy sheet attached to the posterior peritoneum, lateral to the ascending and transverse colon, sweeping medially and downward over and around the ascending colon and reaching even to the caecum.
3. Lane's band—an ileo-pelvic, short, thick,

band connecting the antit-mesenteric border of the lower four inches of terminal ileum to the pelvic brim.

4. Pericolic membranes involving the lower ascending colon or caecum or ileo caecal junction and attaching to the peritoneal wall. Inflammatory adhesions about the ileocaecal junction are not of particular concern here, but the author believes that they should be severed so as to release the viscera to normal motility.

With this as an introduction, the purpose of this paper is to emphasize that parieto-colic membranes by whatever name, are pathological and do produce distressing symptoms and should be looked for and removed whenever they limit the normal motility of the bowel.

The height of humiliation to one's pride is reached by making a diagnosis of so-called "chronic appendicitis," finding a non-inflamed appendix with adhesions and feeling confident after removing it, that the patient would be rid of his complaints; and later to find him hounding you with the statement: "But, Doctor, I still have the same pains I had before—are you sure you removed my appendix?" Psychosomatology won't work here.

A typical example: Robert M., age 36, had complaint of distresses in the abdomen for ten years; chief among them were indigestion, belching, feeling of fullness in the right side, distress in the right side on exercising, right rectus muscle resistance, mild constipation, distress after large meals, pain in the R. L. Q., tenderness of the right side, some nausea at times, flatulence, and more than normal nervousness and irritability. He stated he couldn't eat heartily and had to pass up many foods. He has at times had a pain and burning in the epigastrium.

In a hospital he had been thoroughly examined, including a gastrointestinal study, barium enema, gall bladder dye study—stomach analysis, kidney study, and pyelograms—nothing significant was found and he was discharged.

Later he was examined by a private physician who advised and did an appendectomy, following which his convalescence was uneventful for one week. Then came a return of all of the previous symptoms. He later moved to California hoping for a climate cure.

He finally went to the Veterans Hospital where another complete check-up was done, including kidney study and pyelograms. At this time a peptic ulcer was diagnosed and he was placed on medical care along with thiamine chloride.

Six months later I saw him for the first time.

His complaints included pain and distress of the right side, flatulence, nervousness, irritability, pain on exercising, indigestion, weakness, exhaustion, some loss of appetite, feeling of fullness on light eating and much discouragement.

He was moderately nourished with a slightly nervous temperament and unhappy in his outlook at doctors. He had completely normal physical findings except for a high right rectus scar and a definitely tender right-sided abdomen with some right rectus resistance from his gall bladder area to the pelvis. This had a doughy sort of feeling and some flatulence was audible on palpation.

A barium enema was given and the roentgenologist's report was essentially normal except for the following: "The caecum was well filled and was intrinsically negative except for some spasticity. There appear to be also some small adhesions in the ileocaecal area. An incompetent ileocaecal valve allowed some barium to flow into the ileum. A later picture, after evacuation, showed only a moderate amount of barium remaining, chiefly in the lower ileum and descending colon and sigmoid. The appendix was not visualized." His summary was: "The findings are those of moderate angulation of the colon together with adhesions."

He was further studied, including stool examinations, for parasites, digestive disturbances, blood studies, and so forth. Celiotomy was advised after two months of observation and treatment. Then it was, I lost him.

Two years later he returned. During the interim he had seen a neurosurgeon for possible cord tumor—one chiropractor, and two osteopaths, the last of which, after three months of treatment, advised him to be operated because it was beyond him.

The essential findings at operation were: "The caecum was found lying snugly attached to the postero-lateral wall of the abdomen with adhesions at the junction of the ileum. There were adhesions between the ileum and caecum, which were separated and the ileum and caecum both mobilized and delivered. A Jackson's membrane which spread out in a fan shape over the whole ascending colon, beginning just above the ileocaecal valve, was found. This membrane was severed between ligatures in small portions until the entire ascending colon was mobilized, leaving it and the caecum freely movable. No other pathology was found." He has been entirely free from all complaints and in excellent health for two years, after ten years of distress.

A second case, a lady, Mrs. A. F., age 33, had an appendectomy six years previously. Her complaints on her first visit were:

1. Gall bladder trouble for years.
2. Pain in R. L. Q.
3. Nausea at times.
4. Pain in the pit of the stomach.

Her general build was slender and asthenic. A roentgenologist's report—"Gallbladder study showed normal filling, no stones, and normal emptying; kidney study normal, x-ray barium study of the stomach and duodenum normal. At the end of 24 hours and after evacuation, there was a definite stasis in the caecum suggesting the presence of a band or adhesions. The barium enema passed in readily. Lack of mobility and tenderness of the caecum were noted. His conclusion was: "Probable adhesions or band across the caecum."

Upon opening the abdomen the caecum was found lying well in the pelvis, and about 4" above the pelvic brim the ascending colon was found surrounded and suspended by a typical Jackson's veil. This membrane was severed in numerous places between uigatures. The caecum and ascending colon were completely freed and mobilized and all constrictions removed. She had an uneventful recovery and has been free of all complaints for four years.

I was embarrassed about ten years ago by the failure of a patient to stop complaining after appendectomy for a chronic appendicitis. I had had ample opportunity to rule out all other diagnoses and expected complete relief. Some time later I saw the late Charles E. Phillips make a diagnosis of a Jackson's membrane, name it as the pre-operative diagnosis, sever an extensive Jackson's membrane, and remove the appendix, after which the patient was completely relieved. I recalled that my patient also had a Jackson's membrane. Needless to say I re-examined him. The x-ray showed the caecum distended, tender, and relatively fixed with very little barium in the transverse colon. Following the second operation in which the membranes were severed, my patient became quite happy and has had no abdominal complaints since. Thus came my interest in these membranes. Though my own cases are few they correspond identically with those in the literature.

I was very amazed to find this subject not well featured in the Book of Standard Nomenclature as used in the hospital records classification; and further to find that in many hospitals these membranes, bands and veils are given slight recognition in the cross index system, thus making it extremely difficult to study the subject.

The literature is also very scant on Parieto-colic membranes.

The surgical text books treat these parieto-colic membranes with but scant courtesy by mentioning them, and often miss the point by advising against all interference unless they produce obstruction.

In discussing this subject with numerous surgeons they generally consider these as normal and steer away from them. However, according to W. A. Bigelow of Brandon, Manitoba, Canada in reporting a series of over a thousand patients with peri-colic membranes, 10% had previous appendectomies.

He reported in 1938 on the end results of his operations for these congenital bands and membranes, on those who had previous operations for chronic appendicitis only, and who had not experienced any relief whatever from the appendectomy performed—and whom he had operated with complete removal of all abnormal congenital bands and membranes from the caecum, ascending colon, hepatic flexure, or any combination of these membranes. Out of 169 patients questioned, 147 answered, of which 136 reported complete cures. Eleven reported not cured, of which two had post-operative adhesions—were re-operated and cured. One was later diagnosed a neuralgia of the ileo-hypogastric nerve. One had no pain until a subsequent pregnancy and confinement when she reported similar right-sided abdominal pain. Seven did not return for examination. Thus he reported 92% cured of those who received no relief from a previous operation for so-called chronic appendicitis complaints.

Dr. Warren L. Duffield of Brooklyn, N. Y. in 1932 reported approximately 200 cases of which 10% had previous appendectomies, leaving the same symptoms which existed prior to surgery. This figure corresponds with Bigelow's experience of 107 out of a total of 1027 cases.

He further calls attention to the change in the local and reflex symptoms depending on the age of the patient. Constipation is present in 50% of all patients of all ages. Right iliac pain and tenderness are complained of in the age groups of the second and third decades but diminishes in the later decades. Nausea and vomiting are increasingly present with the increasing age groups as also are epigastric pain and flatulence. In brief, as age increases the local right lower

quadrant symptoms become less and the reflex symptoms to the stomach, pylorus, gall bladder, and descending colon increase. Thus the patient in later years tends to develop symptoms of gall bladder disturbance, stomach ulcers, pyloric spasms, feeling of fullness and meteorism, spastic colons, gas and indigestion, with easy vomiting.

Warren L. Duffield concludes that peri-colic membranes must be thought of when one is tempted to make a diagnosis of chronic appendicitis in the young and that they be considered in those beyond the second decade presenting early or typical symptoms and findings suggesting gastric or duodenal ulcers and spasm of the colon.

He also asks the question, is it possible that this right iliac fossa irritation which may so definitely and distinctly produce pylorospasm with its accompanying hyperacidity, be an etiological factor in gastric or duodenal ulcer?

Dr. W. H. Buerman of Portland, Oregon in 1934 described at considerable length, the entire "congenital peri-colic membrane syndrome" and calls attention to an extensive list of symptoms not only local, as well as generalized, but also reflex in nature; and concluded that the congenital peri-colic membrane syndrome may explain why some of the cases of upper and lower abdominal chronic symptomatology attributed to low grade infections of the gall bladder and appendix were not relieved by the removal of the gall bladder or the appendix or both.

Golder McWhorter of Chicago in 1936 reviewed the literature and concluded that attacks and symptoms of incomplete obstruction with distension and limitation of mobility of the caecum and ascending colon may be mistaken most frequently for acute, subacute or chronic appendicitis, and that a careful, gentle exploration should be made for parieto-colic membranes as well as other pathological conditions at all operations, except in acute conditions, or where it would not be good surgical practice.

Credit must be given to Wilms and Jackson, who did much to call attention to the futility of expecting a clinical cure in patients complaining

of pain in the right iliac fossa by simple appendectomy when there were present congenital membranes constricting the ascending colon and hepatic flexure. Far too little importance has been credited to Jackson's original monograph on "Membranous Parieto-colitis" published in 1909. Though the title is a misnomer, the paper is a classic in its description of Parieto-colic membranes, their symptoms and treatment.

In conclusion:

1. There is much evidence that the distressing symptoms of localized ascending large bowel constriction may be mistaken for the clinical chronic appendicitis syndrome; and failure to recognize parieto-colic membranes and to remove them will explain some of the failures to cure the symptoms attributed to chronic appendicitis.

2. Far too little appreciation and significance by the medical profession is attributed to the distress syndrome and pathology produced by these membranes.

3. Far too much significance is attached to the quick appendectomy and the small incision, and not enough to the symptom-producing membranes of the ascending colon and caecum.

4. All such membranes should be searched for in the abdomen and listed in the cross classification in the hospital records as well as the disposition of same by the surgeon. The subject needs to be better known and considered in the differential diagnosis of all symptoms of the gastro intestinal tract and abdomen.

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SERVICING NATURE'S "AIR CONDITIONER"

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IN recent years mechanical engineers have added greatly to our bodily comfort and pleasure by developing year around "Air Conditioning" for our homes and public buildings, yet, for untold centuries, Nature has had an "air-conditioner" functioning in the upper respiratory tract of mammals that for size and efficiency far surpasses anything our modern engineers have been able to develop!

It is simply ludicrous to imagine that a business firm handling air-conditioning equipment, would send out men to service it who had never been taught the fundamentals of its operation, and yet, the paucity of the knowledge of the average physician on the functions of the nose is appalling! How many of you here today can give a definite yes or no to this question, "Do the nasal sinuses play any appreciable part in modifying the air we breathe?"

Why should you have any knowledge of this when none of the textbooks that you studied even hinted that the nose plays such a vital role in this business of actually keeping alive? I have searched diligently through all the textbooks of general physiology and I failed to find a single one that even considered the nose as an organ, like the heart or the lungs. Even the textbooks on Nose and Throat devote very little space to functions of the nose.

To the pioneer work of Arthur Proetz of St. Louis, as much as to any one man, is due the honor of stimulating the great amount of research that has been done in the last few years on the physiology of the nose, and to French K. Hansel goes the honor of focusing our attention on the part that Allergy plays in upsetting those normal functions.

Just as in any other "Service Manual" on air-conditioning equipment, our "Manual" today, will also start out with a brief description of the parts and how they work.

Since every phase of nasal activity is dependent on *movements* of air, we might conveniently divide these functions into two groups: (1) Those that affect the air going into the lungs, and (2) Those functions depending on air going out through the nose.

In the first group are (1) the sense of smell, (2) a thermoregulatory system, (3) the respiratory function or "air conditioning," and (4) Bacteriostasis.

In the second group—Phonation.

A brief review of the anatomy will help us visualize how such a seemingly small organ can accomplish so much. In this slide, both the sagittal and coronal sections have been drawn to the same scale. It serves to emphasize two facts, (1) the size and volume of the air space occupied by the accessory sinuses, and (2) the vast amount of mucous membrane surface that is exposed to the air, especially when you compare this total area with the cross-section area of the nasal meati.

Another factor to keep in mind is the location of the openings of the sinuses. As you well remember, the ostia of the frontal and maxillary lie just below the insertion of the middle turbinates on the lateral walls, while practically all the other ostia are above this point. The points that I particularly wish to emphasize here, are the size and position of these ostia, especially in relationship to their own individual sinuses. With the exception of the frontals, each ostium is well above the floor of its sinus, so that little or no fluid can drain out of them, even in the face down position. Evidently, then, Nature designed them as air chambers. Since these ostia are so small, the volume of air interchange between the sinuses and the nasal cavity is so slight that the value of these chambers in warming and moistening the air for use in the lungs is practically nil. They are so situated in regard to the air currents, however, that they make excellent resonators. However, this condition is present only in relation to *expired* air. The contour of the turbinates is such that none of the air currents set up by *inspiration* comes in direct contact with the ostia, but the air currents set up by *expiration* flow directly past them. This accomplishes two things: it insures their protection against dehydration and external violence by keeping them constantly bathed in warm moist air, and, at the same time, the sound vibrations set up in the outgoing air column by the vocal cords can be readily amplified. Thus we

see that one important function of the accessory sinuses is the amplification of sound.

Another important anatomical fact to consider is the blood and nerve supply to these parts. Since the sinuses develop by a process of invagination into solid bone, and as the mucosa is laid down as the cavities are formed, naturally most of the nerves and blood vessels of the mucosa lining the sinuses must get there by way of the ostia. Therefore, any factors influencing the state of the mucosa around these will also influence the state of the mucosa lining the sinuses. Hence the importance of getting your medications to the ostia, if you wish to get the maximum effect of these medicaments on the sinuses. This can only be accomplished at home, by the patient, by his assuming one or the other of these two positions, and to stay in that position long enough for the medicine to do its work before it runs on into the pharynx. So, if you feel that you must prescribe the use of nose drops, be sure that you instruct the patient in how to use them right!

Still another very important anatomical fact to consider is the position on each side of the nose, of one of the largest of the ganglia of the sympathetic system, the sphenopalatine or Meckel's ganglia. These two ganglia, as you well remember, have direct connections through the vagi and the parasympathetics with all the somatic processes in the body. Each one lies just beneath the mucosa at the posterior tip of the middle turbinate. This places it in the "slipstream" of both in-coming and out-going air, where both normal and abnormal changes in this medium can easily influence it. In addition to that, the normal drainage from all the sinuses flows directly over them. They are separated from three different sinuses, antrum, ethmoid and sphenoid, by such thin-walled partitions that any internal inflammatory changes in these particular sinuses can easily effect them. Is it any wonder, then, we so frequently get symptoms affecting the whole body when there is some pathological process going on in the nose and sinuses?

The organ of the sense of smell occupies but a very small space, and that in the uppermost part. Since man is not dependent on this function to obtain his food or protect him from his enemies, its main value to us is chiefly through its relationship to the sense of taste and the nervous mechanism controlling digestion.

A function of the nose that has received but little consideration until recently, is the relationship between the nose and body temperature.

Muzio ran a series of interesting experiments which showed that thermic excitation of the upper respiratory tract produces a vasomotor reaction in the skin. It was demonstrated that when a current of warm air passes through the nose, a cutaneous vasodilation is produced, and when a current of cold air is applied in the same manner, the opposite effect, viz: vasoconstriction, is produced in the skin. These reactions show that the nose possesses a thermo-regulator for the whole body. This acts through the sympathetic and parasympathetic systems. This cutaneous reaction is just the opposite to what happens in the nose itself, for inhalation of cold air induces a vasodilation of the venous plexuses of the turbinate bodies.

The third function, that of changing the outside air to make it suitable for the lungs to handle, is accomplished in a truly remarkable manner. In the exceedingly short time that the air uses in passing through the nose, three distinct changes take place: (1) the temperature is changed to approximately body temperature; (2) it is nearly saturated with moisture; and (3) the heavier than air particles are cleaned or "filtered" out to a marked degree. All three changes are aided to a great extent by the simple expedient of slowing down the speed of the air currents through the nose. Everyone is conscious of air movements at the entrance and at the pharynx, so we take it for granted that the air passes just as rapidly between these two points.

You have all seen little lakes in the mountains. You could detect no movement of the water any place except at the outlet or inlet. Just so has Nature slowed down the movements in the nose. Compare the size of the outlets and inlets to the actual volume of the cavity of the nose and you will see what I mean. You feel movement of the air as it goes in here and displaces air already in this space, and you feel the movement of this displaced air going into the pharynx, so, it is natural to assume that it goes straight through. What really happens is that the currents tend to go straight up and then diffuse down and back over the turbinates.

You can prove this to yourself by remembering that when you wish to detect a faint odor you instinctively make a sudden "sniffing" in-

halation in order to send more air into the upper part of the nose over the olfactory area. Or you might ask yourself this question: "Why should a sudden downward movement of the diaphragm cause the air in the nose to shoot up higher than it does in normal respiration?" The answer to that question again shows how Nature makes use of very simple expedients to gain her objectives: she made the entrance to the nose perpendicular to the plane of the face!

This was done to take advantage of a law of physics which says that gases on being forced through a small opening move at a right angle to the plane of that opening. Illustration—pin prick in a toy balloon.

In ordinary respiration, then, the actual speed of the air is perceptibly slowed down before it leaves the vestibule, and passes over and under the turbinates by slow diffusion eddies. This slowing of the air not only allows it to have longer contact with the turbinate bodies so that temperature and humidity changes can take place, but the loss in momentum allows the coarser of the heavier than air particles that have gotten by the vibrissae to settle down to the floor. The lighter particles, like the bacterial-laden moisture droplets, are prevented from passing into the lungs by coming in contact with the sticky surface of the mucous sheet that covers the whole mucosa.

Let me pause here to emphasize the importance of this sheet of mucus. It is one of the most, if not *the* most valuable means of defense our bodies have against bacterial invasion! Here at the point where our bodies are subjected to the most violent assaults by these bacterial invaders, Nature has furnished us with a substance that not only has some bacteriostatic properties of its own, but its very viscosity and constant movement tend to prevent there being any chance for the bacteria to come in actual contact with the mucosa itself. It is only when the bacteria get *through* the mucosa into the submucosa that we have any signs of inflammatory changes. So, would it not be logical to infer that anything that would interfere with the normal direction of movement or slow it down in any way, would make it easier for bacteria to make contact with the mucosa and penetrate it? Thus it behooves us to learn more about the agents that affect this mucus and its movement.

During the last few years a great deal of re-

search has been done on this subject, notably by Proetz, Van Alyea, Tremble, and many others. They have shown that the whole mucous surface lining the nose and sinuses is covered with a completely intact sheet of mucus which is constantly in motion. Inside the sinuses, the movement of the mucus is toward the ostia, while in the nasal passages this movement is toward the posterior orifices, at the rate of 4 to 6 mm. per minute, a new layer of mucus forming every ten minutes.

The *total amount* of this mucus that is secreted every twenty-four hours by a normal adult is approximately one quart, which is emptied into the pharynx, mixed with the saliva and swallowed.

This, at first thought, seems to be a rather peculiar phenomenon. Nature goes to a great deal of trouble to filter the dust, bacteria and other harmful substances out of the air that goes into the lungs and then dumps it into the stomach! However, the gastric juice is capable of destroying most of the harmful ingredients in the swallowed mucus. Yet, in a recently published article, one of our leading pediatricians stated that the loss of appetite, malaise, etc., of youngsters suffering from chronic sinus infections was due to the pus that they were constantly swallowing. Personally, I believe that their symptoms are due either to the effect these toxins have on the sphenopalatin ganglia, or to the amount of these toxins that are absorbed through the thin-walled venous plexuses of the turbinates, rather than from the *tough* lining of the stomach. This phenomenon should also explain the inefficacy of oral vaccines. If swallowing vaccines will build up an immunity, why haven't we all developed complete immunity to bacterial diseases long ago, since we are daily swallowing many millions more bacteria than are ever given in any oral vaccine?

The mechanism that keeps this sheet of mucus in motion has received a great deal of study. The outer layer of cells of the mucosa of the nose and sinuses is ciliated columnar epithelium, interspersed with numerous goblet cells which form the mucus. The cilia keep up a constant rhythmic motion and always in the same direction, so that the layer of mucus is impelled as a complete sheet. If for any reason there is a slowing down of the ciliary activity in one small area, the mucus begins to adhere at this point, but the rest of the sheet keeps on moving, until

the force of the whole action pulls it loose or produces a tear. If a tear occurs, the way is left open for the bacterial invaders to come in contact with the mucosa itself.

There are a great many factors, both chemical and mechanical, which interfere with ciliary activity. The two most common ones are trauma and dehydration. In other words, anything that will cause an undue amount of dryness in the nose, or that will mechanically tear this mucous sheet, either on the part of the patient himself, or the doctor treating the patient, is a potentially predisposing factor causing infections of the upper respiratory tract.

Let us consider for a little the factor of dryness in the nose. The various investigators are not agreed as to the exact amount of water given off by the nose to the air going into the lungs, but all are agreed that, with the outside air containing 35% humidity, the nose of the normal individual gives up at least one quart every twenty-four hours. Then if the humidity of the air is materially reduced, much more moisture must be given up by the mucosa. A normal nose can take care of this extra burden for a reasonable length of time, but if this period is unduly prolonged, particularly if in addition to this it has to stand the added insult of handling air in crowded quarters containing an unusual amount of infectious material from sneezing and coughing of those already infected, it soon reaches the limit of its ability to handle the situation.

You are no doubt wondering why I bring that up, when most of us do not live in a particularly dry climate. Did you know that if the temperature of air containing 35% humidity is raised from the freezing point to 70°F that its humidity is lowered to 15%? In other words, the air in the average home or office during the winter time is drier than that of the Sahara Desert!

While the nasal mucosa requires a certain amount of moisture in order to function properly, an excess of water beyond that optimum amount becomes definitely harmful. Several investigators have reported that irrigating the nose with only 500 c.c. of normal saline will cause a temporary cessation of ciliary activity for quite a period of time, and repeated irrigations will destroy the cilia completely and the cuboidal cells will be replaced by stratified squamous cells. Yet, all our N. & T. Journals still carry

ads urging the sale of nasal irrigators for treatment of acute sinusitis!

Many of the drugs commonly used in the nose have been shown to be definitely harmful to ciliary activity. This is particularly true of the sulfonamides, which not only inhibit ciliary activity, but tend to cause a degeneration of the surface cells of the mucosa. Adrenalin, even in very weak dilutions, will cause a permanent paralysis of the cilia with which it comes in contact. Cocaine, if only used in dilutions of 4% or less, is not harmful to the cilia, but 10% or stronger will kill the cilia, and it will take several days for them to regenerate.

Oils slow down ciliary activity by their mass action, and since they are not miscible with the mucus, the effectiveness of their dissolved medication is open to question.

Many nasal sprays and nose drops still contain camphor, eucalyptol, or menthol, under the mistaken assumption that they will "clear" the nasal passages. It has been proven that none of these drugs have any vasoconstriction action whatever. Their seeming therapeutic effect is the result of their anesthetic action on the mucosa.

The isotonicity and the pH of the secretions are very important. Either hypo- or hypertonic solutions will inhibit ciliary action. The normal pH is slightly acid, becoming slightly alkaline in the presence of acute infections, so, the ideal vehicle for nasal medication would be an isotonic buffered solution with a pH of 6.2 to 5.7. In this solution one might use $\frac{1}{2}$ to 1% ephedrine; 1% neosynephrin; or 0.1% privity without materially affecting the activity of the cilia.

It is apparent, therefore, that the concept of treating nasal pathology must be modified from an exclusively anti-septic or anti-bacteriological point of view, to one that encompasses physiological principles.

The way in which an organ is used will also enhance or detract from its efficiency. Even so simple a thing as the way in which the nose is blown, may have far reaching effects. The desire to blow the nose is similar to the desire to scratch when you have a pruritis—if you indulge it too frequently or too vigorously, you defeat the end you sought. Too vigorous blowing of the nose not only tears off the normal protective sheet of mucus, but the force of the rapidly moving air causes more irritation and swelling, thereby stopping the passages still further,

causing more desire to blow and so on ad infinitum. Another bad feature of blowing the nose too vigorously is the danger of forcing infectious material back into the sinuses or in through the eustachian tubes to the middle ears.

The underlying cause of the big majority of all the symptoms complained of by patients suffering from pathology of the nose can be summed up in one word — *swelling*. Swelling of the nasal mucosa, in turn, is caused by either an inflammation or an allergic reaction, or it may be a combination of the two. For so many years we have been imbued with the idea that all tissue-swelling is of inflammatory origin, that it is hard to believe that 70% of all these cases have an allergic factor. Yet that figure has been pretty well agreed upon by all rhinologists who have really made an investigation of the subject. However, a routine smear made from the secretions of the nose of every patient showing nasal symptoms and stained as you would for a differential blood count will soon convince you of the truth of these figures. No satisfactory explanation has as yet been made of the role that the eosinophiles play in allergic reactions, but they are always there in large numbers, both in the tissues themselves, as well as in the secretions from the tissues. This, then, is the reason for doing routine nasal smears as a diagnostic procedure.

Food allergens play a rather minor role as the causative factors in nasal allergy, but it is often necessary to put the patient on an "elimination" diet in the early part of the treatment until they become partially desensitized to the inhalants.

Inhalants are the most frequent allergens inducing nasal allergies. Among the common ones of these are feathers, animal danders, cosmetics, tobacco and tobacco smoke, but the most frequent of all are house dust and molds.

Luckily for us, nasal patients respond well to desensitization to the inhalants, when treated

with the minute dosage that Hansel calls the "optimum" dosage, as contrasted to the original idea of trying to build the dose up as high and as rapidly as possible. I have had one patient, whose nose was completely occluded with polypi, who came into the office twenty-four hours after a single dose of 0.05 c.c. of a one to a million dilution of house dust and molds, stating that she had breathed through her nose all night for the first time in weeks. Of course it is not often that you are lucky enough to hit the optimum dosage that easily, but all cases of nasal polypi are benefited by allergic treatment. Cases of third degree polyposis, especially if they have been of long standing, get much quicker relief by the surgical removal of the polypi. This should be followed by a thorough allergic examination and treatment to prevent their recurrence. Many seasonal hay fever patients are kept symptom free during the height of the season by the intra-dermal injections, at twenty-four or forty-eight hour intervals, of a similar dilution of the pollens to which they are sensitive.

The anti-histaminic drugs are of great value in relieving the symptoms of these patients, but we like to restrict their use to a minimum, particularly in the early stages of the treatment, while the "optimum" dose is being worked out.

The vasoconstrictor drugs should not be used by patients whose symptoms are primarily allergic, because they are more prone to become sensitized to them, particularly to privity. Neosynephrin is also a very common offender in this respect. Ephedrine, in weak dilutions, has the least allergenic tendencies of any of this class of drugs. So this is the vasoconstrictor of choice to use when there is an acute inflammatory reaction present, but even these patients should be cautioned against using it too long.

In closing, let me again emphasize the fact that no good mechanic ever goes out to service any "air-conditioning" equipment, without being thoroughly familiar with "how it works!"

EFFECTS OF ACTH AND CORTISONE ON RHEUMATOID ARTHRITIS

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HERETOFORE our knowledge of the remissions seen in rheumatoid arthritis has been limited to the study of unpredictable and indefinite cases of remissions associated with pregnancy, jaundice and occasionally with the administration of gold. ACTH and Cortisone have made it possible to study clinical and laboratory changes from active disease to remission in the space of a few days, thereby suggesting that there is a definable remission factor present and that it is common to all cases of rheumatoid arthritis. In previous studies it was found that there was a distinct difference in amino acid urinary excretion values between normals and patients with active rheumatoid arthritis. Consequently, the remissions produced with comparative ease by ACTH and Cortisone were studied from the standpoint of amino acid excretion levels before the administration of medicine and following a prearranged schedule of administration.

Selection of Patients and Methods of Study

During the past year ACTH and Cortisone have been administered to a total of 71 patients. These patients suffered from active rheumatoid arthritis and had been under close observation for several months or longer. Preference was given to the acute and severe cases with minimal joint destruction and in whom we believed there was a measurable amount of reversible disease present.

The average age of the patients studied was 43.5 years, ranging from 20 to 73 years of age. The average duration of the disease was 5.7 years, varying from six months to 17 years.

The first patients studied were hospitalized during the entire period of investigation. They were observed during the initial control period prior to the institution of experimental therapy, during which time they were under metabolic control with identical daily diets, absence of medications and degrees of daily activity. Ob-

jective and subjective symptoms and signs were noted and recorded daily. The degrees of stiffness, rest pain and motion pain, as well as heat, swelling, redness, tenderness, strength of grip and degrees of function, were included in each patient's record. Blood pressure readings and weight recordings were also made.

During the past month we have instituted a program of treating patients on an ambulatory basis with multiple daily injections, both in the office and at home.

DOSAGE

Cortisone. Originally Cortisone was given in the dosage of 300 mg. the first day and 100 mg. thereafter. Of late we have been giving 100 mg. of Cortisone daily without the initial 300 mg. injection.

ACTH. In our early studies we administered 80 mg. of ACTH daily. One patient received as high as 160 mg., but we have found that optimal doses are lower than the original 80 mg. Most of our patients have received 40 mg. daily with good results. In recent months we have experimented with even smaller doses ranging from 5 mg. to 40 mg. a day. It has been further found that divided dosages are of more value than one single dose daily. Consequently, our patients have all been given ACTH every six hours. We have made many attempts to reduce the dosage of ACTH to the minimal dosage at which the remission factor is present. One 73-year-old woman with severe rheumatoid arthritis experienced complete remission on 20 mg. daily. Two patients received an almost complete remission on 10 mg. daily. All the patients exhibited measurable remission on 40 mg. or less per day.

Duration of Treatment

Duration of treatment for the hospital group ranged from 10 to 20 days. We have not as yet established a duration schedule for ambulatory patients; however, we do have several patients who have received intermittent courses over the period of the past nine months resulting in complete remissions.

TOXICITY

Cortisone. Of the patients treated with Cortisone only two, both females, showed early a tendency toward rounding of the face or moonface, slight hirsutism and slight tibial edema, with evidence of mild sodium and water retention. These changes disappeared during the next two weeks after discontinuation of the medicine. None of the patients developed glycosuria, hypertension or psychoses; however, these are all short term studies and other reports indicate there are more serious hazards in long-term large dosage administration.

ACTH Of the patients receiving the larger doses (80 to 160 mg.), one developed transient hypertension and sodium and water retention, with weight gain. Three appeared moderately depressed in emotional tone. Of the remainder of the patients receiving 40 mg. or less, none showed any evidence of weight gain, hypertension, glycosuria, elevation of blood sugar, hirsutism or depression. There was some occasional euphoria and insomnia. Here again these are short term studies, although we have had experience with intermittent dosages for longer than eight months without evidence of undesirable effects.

Clinical Results

The typical clinical response to ACTH and Cortisone was one of marked improvement in symptoms within the first 48 hours. The patients described a feeling of well being. There was a dramatic decrease in stiffness, rest pain, joint tenderness, motion pain and swelling. There was a striking increase in strength as early as the first 24 hours of treatment. Appetite was generally improved by the third day. The erythrocyte sedimentation rate dropped an average of 41 mm. (Westergren method) in one hour. There was an increase of total white blood cells, averaging 3,100 per cu. mm., and a decrease in lymphocytes averaging 11%. In all cases receiving 40 mg. daily or more there was a drop in the daily quantitative eosinophil count averaging 240 per cu. mm. by the sixth day.

DURATION OF REMISSION

Cortisone. One patient experienced a severe exacerbation of her disease within 48 hours after discontinuation of the medication. Another patient has retained 75 per cent of her improvement for six months or longer. The remainder of the patients gradually returned to their for-

mer degree of disability within one to eight weeks. More than half, however, have retained measurable benefits for more than six weeks, but none of the patients have retained the degree of maximum improvement that they experienced while receiving the medication.

ACTH. One patient experienced an acute recurrence during the first 24 hours following cessation of medication. Twenty patients have retained approximately 75 per cent of their improvement for more than four months. Seven patients have received intermittent administration of ACTH for more than six months, receiving some ACTH at least once weekly. One patient has received 10 to 20 mg. three times a week for six months and has maintained 85 to 90 per cent remission. Two patients, who had received Cortisone some six months or more previously and had relapsed, responded well to 40 mg. of ACTH for a short period of administration. It therefore appears that at least under the conditions studied, significant resistance to ACTH has not developed. Duration of remission following cessation of medication varied widely in each case.

In several instances we have noted normal laboratory findings without complete clinical response and the reverse was also found. In two cases, the sedimentation rate failed to go below 90 mg. (Westergren method), yet the patient was completely free of the disease clinically. In three cases, the sedimentation rates dropped to normal levels and the patients exhibited less than an average clinical improvement.

Plans for the Future

We have found a marked rise in urinary excretion of several amino acids studied during each remission of the disease, whether the remission be produced by Cortisone, ACTH, pregnancy or jaundice. Attempts were made to reproduce these findings with testosterone, adrenalin, amino acid feedings, vitamin C, salicylates, antihistamines, Artisone and X-ray therapy. To date we have not had success in these attempts. The changes seen in amino acid metabolism may or may not have any relation to the remission factor. It may simply be another example of measuring a physiological reaction not essential to remission. An attempt is being made either to produce this amino acid pattern without remission or to produce a remission without the amino acid pattern. Much additional work is needed.

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Editorials

INAUGURAL ADDRESS

of

DR. ELMER L. HENDERSON

President of the American Medical Association

In the Gold Ball Room of the Palace Hotel in San Francisco, California, on the evening of June 27, 1950, at 6 o'clock (Pacific Coast Daylight Time), in a hard-hitting inaugural address broadcast Coast-to-Coast over two radio networks (ABC and Mutual), Dr. Elmer L. Henderson of Louisville, Kentucky, new president of the American Medical Association, charged that "the administrative arm of our Government has failed us in this generation."

The fighting doctor from Kentucky, who took his oath of office at an open meeting of the A.M.A. House of Delegates here, and whose message was heard by millions of the American people, flatly accused "little men with a lust for power" in the executive branch of the Government of seeking to make America "a Socialist State in the pathetic pattern of the socially and economically-bankrupt Nations of Europe."

A Sick Government

The Administration in Washington, asserted Dr. Henderson, is "sick with intellectual dishon-



Dr. Elmer L. Henderson, President,
American Medical Association

esty, with avarice, with moral laxity and with reckless excesses."

That condition must be changed, he declared, "if we are to survive as a strong, free people"—and he called upon all of the American people to share the responsibility and to uphold the Nation's ideals of freedom.

To the 144,500 members of A.M.A., who had received special invitations to hear their new president's address, he said:

Medicine—The Target of Cynical Men

"Tonight I call upon every doctor in the United States, no matter how heavy the burdens of his practice may be, to dedicate himself, not only to the protection of the people's physical health, but also to the protection of our American way of life, which is the foundation of our economic health and our political freedom."

Continued the new A.M.A. president:

"American medicine has become the blazing focal point in a fundamental struggle which may determine whether America remains free, or whether we are to become a Socialist State, under the yoke of a Government bureaucracy dominated by selfish, cynical men who believe the American people are no longer competent to care for themselves.

Under Socialism, Liberty Dies!

"These men of little faith in the American people propose to place all our people, doctors and patients alike, under a shabby, Government-dictated medical system which they call Com-

pulsory Health Insurance. But it is not just socialized medicine which they seek. Their real objective is to gain control over all fields of human endeavor—and to strip the American people of self-determination and self-Government.

"There is only one essential difference between Socialism and Communism. Under State Socialism human liberty and human dignity die a little more slowly, but they die just as surely!"

Then Dr. Henderson, declaring that "American medicine has led the world in medical advances, and has helped to make this the healthiest, strongest Nation on the face of the globe," blasted the critics of medicine with this significant statement:

"It is not American medicine which has failed to measure up to its obligations.

"It is not American business nor American Agriculture which has failed—nor the fine, loyal working people of America who have failed.

"It is the administrative arm of our Government in Washington which has failed us in this generation!"

Press Praised for Leadership

Stressing the fact that many already recognize the dangerous trend toward concentration of power in Washington, Dr. Henderson declared:

"If it were not for the leadership of the American press, in defending our fundamental liberties, American medicine, even now, might be socialized—and under the heel of political dictation.

"The newspapers of America, with few exceptions, have taken a strong stand, not only against socialized medicine, but against all forms of State Socialism in this country—and the doctors of America are proud to take their stand beside the fighting editors of America in the battle to save our freedom and the system of individual initiative which maintains it."

The Miracle of Medical Progress

Reviewing the great achievements of American medicine at the half-way mark of the 20th Century—with 19 years added to the life span during the past five decades, with many dreaded diseases conquered, which were leading killers at the turn of the century, and with the maternal death rate in this country now lower than in any other Nation—the A.M.A. president commented:

"The story of never-ending medical progress in this country is not just a story of so-called miracle drugs and miracle discoveries. The real

miracle of American medical progress is the miracle of America itself—the motivating power of the American spirit, of free men, unshackled, with freedom to think, to create, to cross new frontiers.

"This is the spirit, and these are the very methods, which Government-domination of medical practice would destroy."

Voluntary Way Is American Way

Declaring that the Nation's medical care problems can be resolved "without compulsory payroll taxes and without political pressure," Dr. Henderson pointed out that approximately half the population of the country already has enrolled in Voluntary Health Insurance plans "to take the economic shock out of illness."

Said Dr. Henderson:

"Within the next three years, in the opinion of leading medical economists, 90 million persons will be enrolled in the Voluntary prepaid medical plans—and when that number has been reached, the problem will have been largely resolved."

Dr. Henderson concluded his address by thanking the American people for coming to medicine's defense when it was brought under attack—and reported that more than 10,000 National, State and local organizations, with many millions of members, have taken positive action against Compulsory Health Insurance.

AN EDITORIAL

The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated and all will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling and punctuation.
2. Follow the general rules of medical writing as followed by the Journal of the American Medical Association. (*See Medical Writing* by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several

times to correct, especially for spelling and punctuation.

5. Submit manuscript typewritten and double-spaced.

The Editor is always ready, willing, and happy to help in any way possible.

PHOENIX CLINICAL CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

Massachusetts General Hospital Case Report No. 31152

A thirty-six-year-old graduate nurse was admitted to the hospital because of irregular and profuse menstrual bleeding.

From the time of the menarche, at the age of sixteen, the menstrual periods were irregular and profuse, with considerable loss of blood on each occasion. At times there were long free intervals. At the age of twenty an appendectomy was performed, and a tube, said to be tuberculous, was removed. Following this she had long stretches of amenorrhea, followed by profuse bleeding, occasionally with clots, requiring eight to ten napkins a day for seven days. She received a variety of endocrine preparations, with no apparent effect until about four years prior to admission, when, following the administration of Antophysin, her periods became regular and normal for about two and a half years, but then again became infrequent and profuse. For six months preceding entry she had had almost continuous flow.

The patient had always been obese, averaging 230 pounds. Two years before entry, while on a diet, she lost 75 pounds, but she had subsequently regained 50.

The patient's father died of tuberculosis when she was three years old, and a younger sister had pulmonary tuberculosis.

Physical examination revealed an obese woman in no acute discomfort. The skin was warm. There was no palpable adenopathy. The fundi were normal. The thyroid gland was not enlarged. The breasts were pendulous. The heart and lungs were negative. Slight tenderness was present on deep palpation in the left lower quadrant of the abdomen. A pelvic examination revealed a slightly enlarged uterus but was otherwise not remarkable.

The temperature, pulse and respirations were normal. The blood pressure was 120 systolic, 74 diastolic.

Examination of the blood revealed a red-cell count of 3,570,000, with 10 gm. of hemoglobin, and a white-cell count of 5100, with 66 per cent neutrophils, 27 per cent lymphocytes, 5 per cent monocytes and 2 per cent eosinophils. There were no significant red-cell abnormalities on smear. The urine had a specific gravity of 1.020 to 1.030, with a 0 to one plus test for albumin; a few white cells were found in the sediment. The serum nonprotein nitrogen was normal, and the protein 5.9 gm. per 100 c.c. A glucose tolerance test revealed a fasting level of 105. mg. per 100 c.c., which rose to 185 at the end of two hours, and to 162 mg. at the end of three hours. The basal metabolic rate was plus one per cent. A blood Hinton test was negative. A tuberculin test (dilution unknown) was strongly positive.

Roentgenographic examinations of the skull, spine and urinary tract were negative.

On the fifth hospital day an operation was performed.

DISCUSSION

Dr. Phillip E. Rice:

A 36-year-old obese female had irregular and profuse menses all of her menstrual life except for long stretches of amenorrhea at age 20, following appendectomy and removal of a tube said to be tuberculous, and except for a 2½ year period of regular periods following administration of Antophysin four years ago. For the past six months flow had been continuous. Other endocrines had no effect and I assume that the Antophysin no longer helped. The patient's father and a sister had tuberculosis and the patient's tuberculin test was strongly positive, but she lost no weight and we are not told if she had a cough or ever had a chest x-ray. This last is either a serious oversight or is withheld from us.

Except for slight deep tenderness in left lower abdomen and a slightly enlarged uterus, the pelvis examination was not remarkable. I can appreciate that examination of a 230 lb. woman was neither easy nor reliable. She had no fever and reported laboratory work was all normal except the glucose tolerance test, in which the blood sugar stayed up to 185 and 162 mg. at the end of two and three hours respectively. Urinary sugar test was not reported but is assumed to have been negative. She had a moderate anemia as one might expect with all this blood loss.

It seems strange that anyone who had bled as much as this girl had never had a diagnostic curettage. Finally at the end of our protocol it

says "an operation was performed." Was this the long delayed D. & C. or did they take the bull by the horns and do a hysterectomy? If they did, it must have been a great relief to this woman.

It seems quite probable that this girl had tuberculosis when she was young as evidenced by the positive tuberculin test, the family exposure, the periods of amenorrhea and the report of a tubercular tube being removed. But where is our chest x-ray report?

Genital tuberculosis in the female may originate either as a part of peritoneal tuberculosis wherein tubercles are implanted on the tubes, ovaries, etc., or it may begin inside the tubes from stray bacteria picked up by the fimbriated ends or from hematogenous spread. In the former cases the symptoms and signs are those of the tuberculous peritonitis, while in the latter case the disease may resemble a recurrent gonorrheal infection. The tube becomes hyperplastic and indurated and the disease may readily spread to the endometrium and the ovaries. A positive diagnosis is practically impossible without biopsy or finding the organisms on smear or culture. Since the disease is nearly always accompanied by pulmonary lesions, a chest x-ray is imperative. But our patient's symptoms are all referable to bleeding and she gives no history of pelvic inflammatory symptoms.

What are the causes of uterine bleeding? Briefly, they may be grouped under the following five headings:

1. Complications of pregnancy.

In our patient we have no evidence to place her in this group.

2. Benign tumors of the uterus.

Our patient might very well have a submucous fibroid, and we cannot rule this out.

3. Malignant tumors of the uterus.

Here too, the only evidence we have against this is the long standing history of bleeding. However, this does not prove that she might not have an endometrial malignancy.

4. Functional bleeding.

Surely this is what she was treated for all of her life, and a discussion of the causes of this could be long and still not give us any further insight into the etiology in our case. However, we will come back to this after mentioning the fifth group which is:

5. Other possible causes of uterine bleeding; such as syphilis, simple ulcerations, tuberculo-

sis, etc. In the case of tuberculosis, we are given just enough information to make us want to make this diagnosis, and still we have nothing concrete. It is true that this disease more often causes amenorrhea but involvement of the endometrium could cause ulceration and chronic bleeding. Moreover, it is well known that tubal disease may cause bleeding; hence the tubercular condition might remain in the tubes and still give uterine hemorrhage. However, without a chest x-ray, without a biopsy of the endometrium, without smears or culture of the uterine discharge. I cannot guess at a diagnosis of endometrial tuberculosis. In the case of tubal tuberculosis the evidence is much stronger if we are to rely on the history.

Now to get back to functional bleeding, we must mention the possibility of hypothyroidism. Here we are given a lead that the patient was overweight. A single plus 1% Basal metabolic reading tells us nothing because one basal metabolism may be very misleading. The patient might have been just apprehensive enough to increase her rate to normal when it really was low. Therefore I think that hypothyroidism is a possibility in this case. We may have bleeding as a result of disturbed function of the ovaries. There may or may not be ovarian tumors in such a case for many women in their late thirties have bleeding probably due to waning ovarian activity. Menopausal bleeding is very common, although in many of these cases small endometrial fibroids can be found.

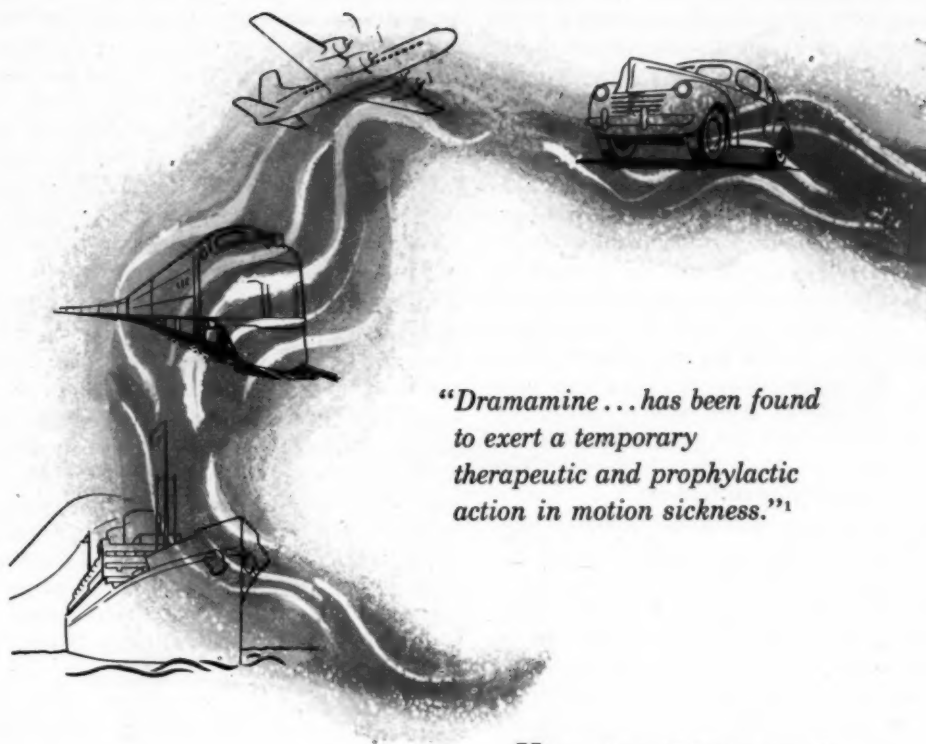
In conclusion, we do not have enough information to make a positive diagnosis in this case except to say the woman had metrorrhagia, which was probably accompanied by an endometrial hyperplasia.

DIAGNOSES

1. Tuberculosis of the remaining tube and ovaries, or
2. Submucous fibroids, or
3. Hypothyroidism, or
4. Any combination of these.

DIFFERENTIAL DIAGNOSIS

Dr. Fred A. Simmons: Since this is a teaching clinic, I am going to mention a few points that might be instructive regardless of what the diagnosis may be. In any patient who is bleeding, no matter what age, we should include the tests that are available today for the ruling out of malignant disease. The most frequently prac-



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1. Council on Pharmacy & Chemistry: New and Non-official Remedies, 1950, Philadelphia, J. B. Lippincott Co., 1950, p. 460.

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SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

ticed and probably the most accurate test at the moment is a diagnostic dilatation and curettage including cervical biopsy. We also have a fairly accurate test, the vaginal smear, which should have been carried out on this patient.¹ The laboratory has now studied vaginal smears from over 1200 cases, with an error of only 4 per cent in 95 cases of proved cancer. The point I am making is that anyone with this history should have cancer ruled out. I assume that this was probably the operation that they intended to do. I should also like to point out that in handling patients with profuse flowing at thirty-six years of age, a dilatation and curettage might better be carried out before giving any endocrine preparation. The assumption that Antophysin regulated the menstrual cycle implies that it was on an endocrine basis, but malignancy still cannot be ruled out. Antophysin is a proprietary name for chorionic gonadotropin.

That the patient had tuberculosis is quite likely in view of the family history and because of the reported tuberculous tube removed at the age of twenty. I believe that the general opinion of gynecologists in most parts of the country is that the proper treatment for such a condition, if it really were a tuberculous tube, is radical surgery, which would include removal of the uterus and both tubes and ovaries, since the process is apparently a hematogenous infection. This patient, according to the record, had no other signs of tuberculosis, and I rather doubt that she had it. I question then the pathological report of the operation at twenty years of age. Another thing that bothered me was that from the physical findings presented here I was unable to determine whether the patient had been married and whether she had ever borne children. It is fair to point out that the pelvic examination should include some comment whether the patient had a virginal or multiparous introitus.

Dr. Benjamin Castleman: The record merely states that the patient was unmarried.

Dr. Simmons: This fact does not help me unless it is fair to assume that she was a virgin, in which case I shall not go into the possibility of inflammatory disease other than tuberculosis. Of course, irregular bleeding of this nature can be due to gonorrhea and its sequelae. A pelvic examination should also include inspection of the cervix. All that may have been left out for the sake of brevity.

In summary, I am inclined to consider the tuberculous history and findings in the tubes to be irrelevant, although I cannot rule out tuberculous endometritis as the cause of the trouble. I am inclined to think that she did not have a carcinoma, because she had lived so long with a history of bleeding. If we can believe the menstrual-cycle history, the amenorrhea followed by profuse flow is the perfect picture of functional uterine bleeding, metropathia hemorrhagica, endometrial hyperplasia or whatever you want to call it.

Metropathia hemorrhagica is a term applied to a specific type of functional uterine bleeding characterized by a state of continuous estrinism with hypoprogestinism, according to Albright.² It is frequently seen in women with general debility regardless of age, presenting itself as alternating amenorrhea followed by continuous flowing, usually without molimen and dysmenorrhea, which may have been present in the patient's normal menstrual cycle. Pathologically the endometrium is markedly thickened, with deep glands having the "Swiss cheese" appearance characteristic of the estrin effect.

Endometrial hyperplasia or what I prefer to call "endometrial dysplasia" is the pathological term applied to the clinical state described above. Functional uterine bleeding or dysfunction of uterine bleeding refers to the abnormal state of flow, with or without amenorrhea, not precipitated by organic pathological disease and is a convenient pigeonhole for cataloguing vague irregular states of uterine bleeding.

I think that on the whole it is wise to suggest the need for diagnostic dilatation and curettage and biopsy. I shall make a diagnosis of endometrial hyperplasia on an endocrine basis; possibly there was a benign endometrial polyp.

Dr. Francis M. Ingersoll: I agree entirely with the diagnosis of metropathia hemorrhagica associated with a hyperplastic endometrium; however, we often see patients with the same history in whom the endometrium is atrophic rather than hyperplastic. Apparently about 20 to 30 per cent of them originally had an over-functioning endometrium.

CLINICAL DIAGNOSIS

Metropathia hemorrhagica.

DR. SIMMONS'S DIAGNOSIS

Endometrial hyperplasia (metropathia hemorrhagica)?

ANATOMICAL DIAGNOSIS

Tuberculous salpingitis and endometritis.

PATHOLOGICAL DISCUSSION

Dr. Castleman: The operation was a curettage and a large amount of endometrium was removed. The diagnosis on microscopic examination proved to be tuberculosis. Following that operation a laparotomy was performed and the other tube and uterus were removed. We found tuberculosis in both the uterus and tube.

Dr. Ingersoll: Did they take out the cervix? I remember one case in this hospital in which someone first removed one tube, then at a subsequent operation took out the other tube and did a supravaginal hysterectomy and finally did a cervicectomy for tuberculosis.

Dr. Castleman: The cervix was removed in this case.

REFERENCES

1. Meigs, J. V., et al. Value of vaginal smear in diagnosis of uterine cancer. *Surg., Gynec. & Obst.* 77:449-461. 1943.
2. Albright, F. Metropathia hemorrhagica. *Main M. J.* 29: 235-238, 1938.

TOPICS OF CURRENT MEDICAL INTEREST

RX, DX, AND DRS.

By Guillermo Osler, M. D.

THE ARIZONA NAMES which one finds in the program for the San Francisco A.M.A. meeting include several repeaters, and others whose names have not appeared there before. . . . Jesse Hamer of Phoenix, the Arizona delegate, is head man of the Council on Medical Service. O. J. Farness of Tucson is discussing a subject on which he published years ago (*coccidioidomycosis*). James Whitelaw of Phoenix discusses a paper on prostatic massage. Hill, Holbrook, Kent and Stephens again have an exhibit on rheumatoid arthritis. . . . There should be enough unsolved problems, either indigenous or imported, so that someone from Arizona could give an original paper sometime (and publish it in *Arizona Medicine*).

THERE IS A BALM IN (OR NEAR) GILEAD.

Recent reports seem to confirm the value of *khellin* (now called "visammin") for angina pectoris, chronic cor pulmonale, and, to a lesser extent, for episodes of bronchial asthma. . . . It was mentioned in this column more than a year ago, after it was described by an Egyptian physician. The material comes from the *khella* plant which grows wild in the eastern Mediterranean countries. Possibly in Gilead.

The passing of DR. ADOLF MEYER, emeritus professor of psychiatry at Johns Hopkins, calls attention to a fabulous career. . . . Among his many achievements was the invention of a subject ("psychobiology"), and also its terminology. The Bostonian comment that the "Cabots speak only to Lowells" was once paraphrased to "Harvard speaks only to Hopkins." This was no longer possible after Dr. Meyers' words came into use in the Hopkins' lectures, since Harvard couldn't understand Hopkins.

The notorious peripatetic case of DIAPHRAGMATIC FLUTTER has turned up again in the J.A.M.A. He has been reported at least four times, and most recently from the Virginia-Georgia-Florida section. . . . Time was (about 1945) when he was seen in Arizona, and formed the basis for a medical society report. Several civilian physicians and those at the V. A. Hospital were able to add to the picture, since the poor fellow subsisted on his abnormality, and moved at frequent intervals. . . . The price he has paid is the numerous cervical scars of attempted phrenic operations.

A relief for MIGRAINE may be possible if the results of Marcussen and Wolff are transposed to a larger series. . . . It won't remove the cause, but they say that if a carbon dioxide oxygen mixture is given three times for five minutes each when the aura gives warning, the headache will be prevented. . . . The allergic, endocrine, autonomic, and psychogenic aspects must then be considered in each case, and non-migrainous conditions be excluded.

Brief COMMENTS which we have heard ABOUT THE PROGRAMS of the American Trudeau Society and the National Tuberculosis Association in Washington, D. C., and the drug conference of the Veterans Administration at St. Louis.—The U. S. P. H. S. favors the slow further experimental use of BCG, in the face of demands to enlarge its usage. . . . TB-1 is toxic, and its trial will be limited by the V. A. . . . The hemagglutination test of Middlebrook and Dubos may help in diagnosis, but it is not completely assayed. . . . Silica can cause BCG to produce progressive tuberculosis in animals (as it has for other non-virulent strains), but the bacilli remain un-

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changed and avirulent when they are subinoculated. . . . The tendency to be conservative in the use of intrapleural pneumothorax has become fairly generalized. . . . Removal of the parietal pleura during a pneumonectomy may result in less frequent empyema. . . . The effect of streptomycin is greatest in the first six weeks, and daily use of one gram seems the best program. A PAS drug, probably sodium, should always be given with any streptomycin drug. The discontinuous use of the drugs has certain proponents. . . . The extra-pleural operation, with lucite spheres, is still of possible value when done right.

TITLE OF A BOOK LONG OVERDUE—"The Mammalian Adrenal Gland," by Geoffrey Bourne. But also "The Adrenal Gland" by Hartman and Brownell. . . . To say nothing of a book by Gordon and Katsh on the same subject.

Arizona and American Medicine has had glimpses of the avocation of DR. PHILIP CORLISS of Somerton. . . . The local folks know him as a good physician and an avid gardener. He has written in ARIZONA MEDICINE on "Floriculture for the Doctor and Patient," and spoken before the Art Association of the A. M. A. on the same subject. . . . He is internationally known, however, for his 300 varieties of iris, for his new types of iris and daylilies—all grown in the supposedly forbidding alkali soil. . . . His experiments have been reported in numerous garden magazines and (to those who are ignorant rather than esoteric) the journal of the Hemerocallis Society.

A modern MOBILE STRETCHER (surgical cart) is arranged so that the top moves to one side and gently tilts toward the bed. . . . A patient may be transferred from cart to bed by one nurse, with the turn of a control lever, and without the usual lifting and hauling. . . . It also can assume the Trendelenburg and Fowler positions, and carries an attachment for holding an I. V. bottle. No coca colas (so far).

Chambers of Commerce should consider sending out copies of United States maps containing the GEOGRAPHIC INCIDENCE OF FALL POLLEN. . . . One could fudge a bit on the amount in a few other states, but ARIZONA looks like a wonderful haven compared with the midwest, east and Texas. . . . Combine this with the scanty mold spores, lesser bacterial flora, absence of protein housedust, etcetera, in Arizona, and one could fill out a whole year of protection. An allergic person often needs only a little bit less of each—plus happiness.

EYEGGLASS DEPARTMENT. — (This section seems to have as big a future as "South Pacific"). The latest suggestion to prevent fogging of glass-

es is the simplest, though not guaranteed, and comes from the "Dental Digest"—clean the glasses; apply a small amount of solid or liquid soap to the lenses; polish when DRY with a piece of paper tissue. . . . No steaming.

It hardly seems fair to lovers of Pocohontas, Uncas, and Hiawatha to mention the DRAWINGS OF SOUTHWESTERN INDIANS in Abbott's "What's New" for May 1950. . . . Few paintings have been more graphic than "The Problems of Indian Medical Care" which have been composed for that magazine by Frede Vidar, but few have been more sad and depressing. . . . It is a tragic, colorful, impressionistic documentary—and maybe it will do some good, as well as shock and entertain.

One of the slickest MEASUREMENTS OF DRUG EFFECT was published in the Mayo "Proceedings" last fall by Karlson and Feldman, and mentioned here later. . . . Now Karlson and Feldman, plus Gainer, have done it again. . . . In order to determine the effect of TB-1 on guinea pigs, animals in six groups were infected with a standard strain of tubercle bacillus and the results were charted according to the estimates of disease in various organs (a method which they have used for years). . . . On the thirtieth day after inoculation all groups except the control group were treated with one of several regimens. The effect of a full dose of streptomycin was compared with a sub-optimal dose of streptomycin, with TB-1 in the diet, and with TB-1 plus a suboptimal dose of streptomycin. . . . The results seem quite precise. Streptomycin is still the best drug, but TB-1 is of value by itself, and is quite valuable when it combines with the smaller doses of streptomycin. . . . We now have several helpful anti-tuberculosis drugs, but the toxicity of TB-1 for humans is still such as requires close observation.

THE HOSPITAL WORM TURNS—When an employees' union struck against a children's hospital in Oakland, California, the hospital board took quick action. Substitutes were called in from among 3,000 auxiliary helpers, and the housekeeping, kitchen and laundry jobs were filled without a hesitation. . . . A letter was sent to other regional hospitals, warning that the strike was a first move in a nation-wide drive, and that the demands included a contract. . . . The unionization of hospitals is certainly a point to be decided only after clear thought—especially if one must turn over the care of the sick to a group which is willing to use compulsion.

DR. LOUIS DIAMOND of Boston, chief of the national Blood Bank program, gave us an assist last year in describing exchange transfusions for erythroblastosis. . . . He has now been involved

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in a neat piece of medical detective work. With several colleagues, he found that female babies have a better prognosis with the disease than males. They then studied the list of donors, and found that although the mortality in general was 15 per cent, NO DEATHS OCCURRED IN THE GROUP WHICH HAD RECEIVED BLOOD ONLY FROM WOMEN. . . . Apparently the blood of women contains a beneficial substance, and a later series showed the same results when blood from females was used.

The Medical profession in Los Angeles is getting excited over two programs which Arizona saw and used in 1943 and '49. . . . A referendum is being presented on the establishment of a "BUREAU OF MEDICAL ECONOMICS," a la the Alameda County Medical Society. (It will be interesting to see whether this will turn into a simple bill-collecting agency). . . . The report of a BLOOD BANK COMMITTEE has been accepted by the council of L. A. C. M. A. They hope to establish a cooperation between the Red Cross, the society, and the hospital association. (They have the slow chore of arranging banks in a huge area containing 3,000,000 people, where Arizona was able to do so in two areas within a period of months).

This is the time of the year when news from

a columnist is a couple of months behind. The spring and early summer medical meetings have either given the Word direct, or have been quoted in the newspapers and news weeklies. . . . Up to this writing in early June, the USUAL ARIZONA MEDICAL PROBLEMS have not been substantially modified. The anti-arthritis drugs are still incompletely defined, though progress is announced in manufacture; the anti-tuberculosis drugs are about status quo ante last month's column; the antibiotics are more plentiful and less costly, but not much different; surgery and the specialties have only consolidated their gains; and no one has produced a cure for emphysema or desert fever. . . . The second paragraph had something to say about cor pulmonale, though, and even arteriosclerosis is getting attention.

The routine EXAMINATION OF VARIOUS TISSUES AND AREAS of the body has spread from the blood to the lungs to the stomach, and the end is not yet. . . . That is, it was not yet in "sight" until an article by Greer in the Medical Annals of the District of Columbia. . . . Dr. Greer recommends ROUTINE PROCTOSCOPY, and backs up his suggestion with data which show that 3.9 per cent of 747 patients showed cancerous or pre-cancerous lesions. . . . Few procedures would seem to have less chance of becoming truly popular.

THE AMERICAN LEGION AND THE HOOVER COMMISSION REPORT

The American Legion Department of Arizona,
Phoenix, Arizona

The American Legion, as you know, is dedicated to God and Country.

Probably never before in our long and proud history have we of the Legion been put to a more severe test in living up to that sacred dedication than we are today.

Do not believe those who would tell you that The American Legion is a "pressure group" . . . interested only in putting all veterans on a "grave train." That is either a vicious lie or an accusation based upon ignorance of the true ideals of The American Legion.

True, The American Legion's obligation is to fight for the rights and proper privileges of our disabled and needy veterans. It always has been . . . and it always will be.

But The American Legion today stands in the forefront among all patriotic organizations in the United States in the cause of Americanism. It is in the interest of *Americanism* . . . Americanism and *true national economy* that I have the pleasure of appearing before you today.

First of all, permit me to state that The American Legion is *not* opposed to the Hoover Commission Report in its entirety.

The American Legion . . . from its National Commander down to its more than three million post members . . . is wholeheartedly in favor of economy in government . . . *good, sound, commonsense economy*. After all, American Legionnaires are citizens . . . and *just as much taxpayers as any other good American citizens*.

The conception that The American Legion is opposed to the complete Hoover Commission Report is wholly erroneous. Much of it may prove of real assistance in bringing about economy. Some of it already has.

The American Legion *does*, however, oppose *most strenuously* that section of the Hoover Report which would dismember the Veterans Administration . . . which has proven itself for more than twenty years to be the most efficient of all large government agencies . . . into five or more separate bureaus, some of them *purely experimental* and *certainly more costly to the taxpayers of the United States!*

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Many people seem either not to know . . . or to have forgotten . . . that the Veterans Administration was created by recommendation of Herbert Hoover himself when he was President of the United States.

Mr. Hoover, then President, said to the nation in 1929 that . . . in the interest of efficiency, economy, more uniform administration and better definition of national policies, the Veterans Bureau, the Pension Bureau and the National Home for Volunteer Soldiers should be brought together into a *single agency*.

So the Veterans Administration was created by Act of Congress on July 3, 1930, as the *last word in streamlined service to veterans!*

The Veterans Administration today is exactly what its name implies. It administers all laws relative to benefits or services to former members of the Armed Forces and their dependents. These include disability and death compensation . . . disability and death pensions . . . medical and hospital services . . . domiciliary care . . . U. S. Government and National Service Life Insurance . . . vocational rehabilitation and education . . . guaranty of loans for purchase of homes, farms, business properties . . . *everything* applying to veterans.

The wisdom . . . and the *economy* . . . of creating the Veterans Administration as the *one* agency to administer all veteran benefits has been proven to the complete satisfaction of the government and the people of the United States.

During thirty years of careful scrutiny by and cooperation of The American Legion, the Veterans Administration has been developed and so operated that . . . in spite of some existing imperfections . . . it stands alone today among all large government agencies as the one not subject to political pressure and free from pork barrel raids.

That economies even now may be effected in the Veterans Administration we do not for one moment deny. But from years and years of experience and close cooperation with this great one-stop agency, The American Legion . . . which itself fought alongside then President Hoover for consolidation of a number of bureaus into one agency, both in the name of economy and efficiency . . . The American Legion maintains that further economies can best be brought about *within the present set-up of the Veterans Administration.*

But what has the Hoover Commission suggested? It proposes that the major functions of the Veterans Administration be split up into *five or more agencies!*

It recommends that hospital and medical attention be turned over to a new experimental bureau . . . a *United Medical Administration* . . . that hospital construction be transferred to the *Department of the Interior* . . . that all insurance matters be handled by another new and experimental agency . . . a *Veterans Insurance Corporation* . . . that home loans be taken care of by a Housing and Home Finance Agency . . . and that only the lesser veteran benefits remain under the charge of the Veterans Administration.

(Ladies and) Gentlemen . . . such dismemberment of our Veterans Administration is *unthinkable!*

Dismembering of this most efficient of all large government agencies into five separate federal bureaus, as proposed, would not only be a stunning blow to our veterans . . . particularly the disabled.

It ALSO would entail an *additional drain* on America's already over-burdened *taxpayers!*

I ask you, (Ladies and) gentlemen . . . *where could economy be effected in such a set-up?*

As I have stated, The American Legion has proven itself for more than thirty years the most experienced group in the world on veteran affairs. The American Legion's rehabilitation experts, its national, state and post officers and members have labored through these three decades in building up a most efficient Veterans Administration.

BUT . . . the suggestion that the Veterans Administration be vivisected was made without any consultation with either The American Legion or any other recognized veterans organization.

Four times The American Legion asked the Hoover Commission for permission to present the Legion's side of the case. But no such permission ever was granted.

The very fact that all members of the Hoover Commission itself were not in accord . . . and that neither the group of insurance executives nor a big engineering firm called in by the Hoover Task Force would recommend such changes as have been proposed . . . is evidence in itself of the folly of the portion of the reorganization

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plan that would dismember the Veterans Administration.

Permit me to read the following from the report of the Trundle Engineering Company of Cleveland, Ohio, to the Hoover Commission:

I quote . . . "From the very beginning the Veterans Administration has been the beneficiary of the advice and constructive criticism of organized veterans groups (of which The American Legion is by far the largest, with a membership of more than three million) who have acted as spokesmen and representatives of ex-servicemen and their dependents. Formal recognition was extended to these groups by congressional enactment in 1936, naming several national organizations, and authorizing the Administrator to add others at his discretion.

"The full-time representatives of these accredited organizations do valuable work in connection with cases that otherwise would have to be done by Veterans Administration personnel. As intermediary counsel and later as advocate, they save time for the contact officers, the rating boards, and adjudicators.

"Examination of this program indicates that it is sound both in intent and operation. . . . The Veterans Administration, representing the Government, acts as a judge in determining a veteran's entitlement to benefit. As a Claimant he is entitled to the assistance of an advocate fully familiar with the laws governing his rights. This need is met by these accredited representatives of recognized service organizations, who render this aid free of charge and with a minimum of self-interest.

"This policy of recognition offers a corollary benefit to the Veterans Administration as well as to the veterans themselves. The close working of its personnel with well-informed but independent groups serves to provide a source of constructive criticism of procedures, rulings, and possibly activities that is most wholesome. Service organizations through their executive officers in Washington and elsewhere maintain a vigilant watch over its activities and are not hesitant to express pertinent comment when it seems desirable. A number of the service organizations contribute materially to the operation of veteran affairs by appearing by invitation before congressional committees. They either advocate or oppose proposed measures and thus permit examination by the public as to the merit of such proposals."

Thus the Trundle firm, in its report, lauded The American Legion and other veterans organizations for the priceless service rendered by their rehabilitation experts to the Veterans Administration.

Would the United Medical Association, The Department of the Interior, The Veterans Insurance Corporation, the Housing and Home Finance Agency and the Veterans Administration all continue to utilize most beneficially this invaluable service?

Or would the *taxpayer* be saddled with the cost of such service?

We have mentioned the *five* bureaus into which it is suggested we *experiment* with veteran affairs, now handled efficiently by *one* established agency. Then what would we have?

The Hoover Commission proposes that the hospital care and medical treatment presently available to veterans, under the direction of the Veterans Administration, be taken over by a *new colossal federal agency*. It is to be known as the United Medical Administration and contains a cruel joker.

This *experimental bureau* would not render service exclusively to veterans.

Instead of the wise and efficient course demonstrated by the Veterans Administration through the years, the new agency would administer hospital care *also* for the Merchant Mariner, Civil Service employes, Army, Navy, Air Force and Marine Corps personnel and their dependents. This is definitely the beginning of an attempt to divorce the veteran from his identity as a veteran.

That's how this one change would affect the veteran. Now how will it affect you and me as taxpayers?

The creation of any new governmental agency, such as the proposed United Medical Association, inevitably would mean the creation of thousands of new jobs.

It would mean the training of many inexperienced new officials. This would require both time and money.

It would involve many duplicating functions . . . such as existed in the dark 1920's . . . with faint hope that *any* good would result.

In such a program there can be no economy!

Veterans, active servicemen, Merchant Mariners, Civil Service and other government employes are hospitalized under completely dissimilar authorizations. A veteran no longer must

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be accounted for on a morning report, a sick book, a clothing report and a pay record, but for the active serviceman in the United Medical Administration hospital *all* these records must be accurately kept.

The handling of some five or six classes of patients would make the paper work in United Medical Administration hospitals chaotic.

Such ramifications would not work for economy!

They would be stupendous and costly to the taxpayer!

Of all government agencies, only one is familiar with the needs of veteran hospital construction and experienced in this highly technical work . . . the Veterans Administration. If recommendations of the Hoover Commission were followed, this all-important and specialized work would be transferred to the Department of the Interior.

Veterans Administration hospitals have been and are being built for less money per cubic foot than those constructed by the Army and Navy and compare favorably with private hospital construction. Certainly the *taxpayer* could not benefit by the transfer of this work to the Department of the Interior.

The Hoover Commission states that the Insurance Division of the Veterans Administration is inefficient. Yet, it proposes to correct this alleged inefficiency by creating an additional experimental corporation to handle this tremendous job . . . a new Veterans' Insurance Corporation.

The Hoover Commission wants to take from the Veterans Administration the handling of all home loans made possible under the G. I. Bill of Rights, which the American Legion fought so tirelessly to enact into law. The commission would give this part of the Veterans Administration's responsibility to yet another federal outfit . . . the Housing and Home Finance Agency. The commission's failure to make mention of administration of farm and business loans remain unexplained. *The natural inference is that* additional complications may result from a further division of veteran loans into still other agencies.

Should the recommendations of the Hoover Commission be adopted, there would remain in the hollow shell of the Veterans Administration only a relatively small part of its present services, including:

A Veterans' Benefit Service, charged with administration of pensions, retirement benefits, disability compensation and guardianships.

A Readjustment Service, to administer the vocational rehabilitation, education and readjustment allowance programs, as well as the certification of veterans for loan guaranties.

The Office of Legislation would be consolidated with that of the General Counsel.

If such an emasculation should conceivably be adopted by the Congress, the "pushing around" plight of our veterans in 1920 would be only a circumstance to the bewildering chaos into which our veterans of today and tomorrow would again be plunged.

The American Legion will fight to the last ditch to prevent a recurrence of the infamous Economy Act of 1933. That part of the Hoover Report dealing with veterans proposes to repeat the Economy Act on an even greater scale. It would divorce all veterans from their identity as veterans, dismember the Veterans Administration, take their hospitals from bed-ridden veterans, deprive all veterans of preference in government employment, leave the nineteen million veterans of the nation without a unified service agency, and all centralized government responsibility for the welfare and rights of veterans, and leave the dependents of those who fell in battle at the mercy of bureaucratic red tape!

The American Legion contends that the cost of rehabilitating the *human* wreckage of war is as much a part of the cost of waging war as is the building of battleships, tanks, planes and guns. Those weapons are paid for in "*cash on the barrel-head*." The government leans over backward to see that every wartime contractor gets a square deal. But the *human* costs of war are "put on the cuff." They constitute a sacred obligation of the nation. This debt cannot be honorably discounted or evaded by simply writing it off as a so-called economy measure.

A so-called economy measure that cannot conceivably mean *economy*!

How many of you recall the plight of our veterans immediately following World War I?

Back in 1920 The American Legion discovered that the veteran was far from receiving the services a grateful American people had voted for him. Then a labyrinth of agencies was going through the motions of trying to serve the veteran. The result was overlapping, inefficiencies and tremendous expense. For his various rights

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the veteran was pushed around from the Pension Bureau to the Public Health Service, to the War Risk Insurance Corporation, to the Federal Board for Vocational Education, and back again.

Because of this chaos, President Harding appointed a committee of ten prominent Americans to study this deplorable situation and recommend action. This committee, headed by Brig. Gen. Charles G. Dawes . . . himself later vice-president of the United States . . . recommended that all services to veterans be placed in one agency. From this report came the Veterans' Bureau, established by law in 1921. The Dawes committee said in part:

I quote: "It cannot be too strongly emphasized that the present deplorable failure on the part of the government to properly care for the disabled veterans is due in large part to an imperfect organization of governmental effort. There is no one in control of the whole situation. Independent agencies by mutual agreement now endeavor to co-ordinate their action, but in such efforts the joint action is too often modified by minor considerations, and there is always lacking that complete cooperation which is incident to a powerful superimposed authority. No emergency of war itself was greater than is the emergency which confronts the nation in its duty to care for those disabled in its service and now neglected."

Then, upon the recommendation of *President Hoover*, came the further consolidation resulting in the creation of the Veterans Administration in 1930.

Now comes the recommendation of Mr. Hoover's Commission that this great institution . . . the Veterans Administration . . . the magnificent monument to The American Legion and other veterans . . . be torn limb from limb.

Mr. Hoover's Task Force must have failed to study . . . and it certainly failed to heed . . . the bitter experience of the past. The Hoover recommendation of dismemberment, which would return veteran affairs to the chaotic conditions of 1920, is not consistent with the usual sound thinking of this great American.

Just suppose General Motors was told: "You may retain your administrative functions, but you will have to divorce yourself from the other operations of your corporation. Ford will take over your production. Engineering will go to Studebaker. Your distribution will be conducted

by Chrysler. And your sales can be handled by Kaiser-Fraser."

That is substantially what the Hoover Commission recommends so far as the Veterans Administration is concerned.

In such a situation, could you possibly expect more efficiency . . . more economy?

I declare emphatically that, The American Legion does not oppose the Hoover Report verbatim.

The American Legion . . . as much as any other patriotic group . . . insists upon economy.

But we do maintain . . . that that part of the Hoover Report dealing with veteran affairs does not mean economy: It will not reduce taxes.

It means a house divided . . . five experiments to replace one success.

It means more agencies . . . and more taxes!

And that is what nobody wants!



Blue Shield

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A comprehensive, 23-page manual for Participating Physicians in the Arizona Blue Shield Medical Service Plan, which includes a revised schedule of benefits effective on June 15, was mailed early last month. The manual is designed for use both by the Participating Physician and his office staff.

Completed after months of research and preparation, the manual contains a general outline of the Blue Shield Plan, with descriptions of its corporate structure, management, and physician-subscriber relations; the services provided by the Plan and the exclusions in the contract; enrollment regulations; procedures for payments to physicians, and general information pertinent to the operation of the plan from the point of view of the Participating Physician.

In a foreword to the manual, the Blue Shield Board of Directors said, in part:

"Arizona Blue Shield is known to its thousands of subscribers as 'the Doctor's own Plan.' This is a good and accurate designation, for Blue Shield is truly our Plan. It was established by the Medical Profession of this State after long years of detailed study and planning. Its affairs are governed and its services guaranteed by members of our profession. Each Participating Physician is a vital part of the Plan. More than 94 per cent of the members of the Arizona Medical Association have registered as Participating Physicians.

"The establishment of Blue Shield has been positive proof of our interest in the welfare of the citizens of Arizona. . . . Blue Shield, by mak-

ing available the best in medical care on a voluntary pre-payment basis is rendering a very real public service.

"The success of our Plan is largely dependent upon the understanding cooperation of each Participating Physician, and this cooperation can best be developed by a knowledge of the principles and practices which govern Plan operations . . . this manual . . . will be helpful in your contacts with the Blue Shield member and will assist greatly in building and keeping good public and subscriber relations."

* * *

The thirteenth printing of the roster of Arizona Blue Shield Participating Physicians, on June 1, listed the names of 610 physicians. Every county in the State was represented.

* * *

From the records:

Arizona Blue Shield enrollment stood at 58,720 as of May 31, a net gain of 6,883 members since the end of 1949. During all of 1949, Blue Shield paid out \$302,994.57 to physicians for services to subscribers. The payments covered 5,425 cases. During the first five months of 1950, Blue Shield payments to physicians amounted to \$182,138.50—for 3,542 cases.

Arizona Blue Cross had 109,832 members at the end of business on December 31, and 114,175 on May 31, a net gain of 4,343. During 1949, Blue Cross paid out to hospitals the sum of \$912,674.13 for care of its members, the payments covering 14,355 cases. During the five months ending last May 31, Blue Cross paid to

hospitals in behalf of its members the sum of \$445,841.52, for 6,626 cases.

On the national scene:

With the addition of 3,838,587 new members in 1949, national and Canadian enrollment in Blue Shield soared to 14,227,781, a recent count of noses revealed. The enrollment covers seventy-eight separate Blue Shield Plans.

The ninety Blue Cross Plans in the United States and Canada added 3,144,356 members during 1949, bringing the total enrollment at the year's end to 35,918,705.

That's a combined enrollment of well over 50,000,000 and, granted that there is much duplication of membership, it still seems fair to opine that 50,000,000 Americans who prefer the voluntary way in health care can't be wrong—any more than the proverbial 50,000,000 Frenchmen.

The new Williams Hospital, built and opened after years of cooperative effort in the northern Arizona community, was provisionally approved as A Blue Cross Member Hospital on June 14, bringing to twenty five the total of Blue Cross Hospitals in the State. The addition of the twenty beds in the Williams Hospital raised the total of beds in Blue Cross hospitals to 1,829. Four other Arizona hospitals have joined the Blue Cross ranks since January 1. They are Grand Canyon Hospital, 10 beds; Norman Hospital at Casa Grande, 17 beds; the Douglas Hospital of the Phelps Dodge Corporation, 35 beds, and Benson Hospital, 10 beds.

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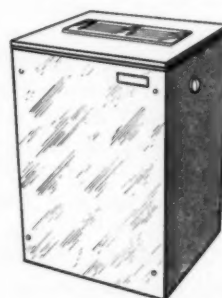
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Statement By Senator Robert A. Taft

The Proposal to create a Department of Health Education and Security is designed to carry out an idea that has been current for quite a while. In fact, I once introduced a Bill to establish a new department. The difficulty is that Health, Education, and Security are all different subjects. On the local level in cities they are entirely separate departments. The only respect in which they are grouped together in the present Federal Security Administration is that they all are matters in which the Federal interest is secondary and the matter of principal interest is aid to the States.

Last year a similar plan was presented, and it was defeated in Congress. It was defeated because it did not conform to the Hoover Plan. Hoover recommends setting up a Department of Education and Security. But he wants to put the Health Division in an entirely separate medical administration. That's been the great issue. The welfare people, like Oscar Ewing, want to run health as a kind of welfare service. The doctors and others feel that medical care and health is a special subject, which ought to be dealt with by people expert in the health field and not subject to welfare direction. Now, the difficulty with this plan is the same as the difficulty with the plan last year. It is true that it separates these three functions into separate departments under the secretary, but the secretary has an assistant secretary, and an under secretary, all of whom are likely to be welfare people, and then it isn't perfectly clear that all the health functions have to be assigned to the Surgeon General of the Public Health.

It seems to me that the plan has all the objections which the plan had last year; and, therefore, I should think under the same circumstances it is likely to be defeated primarily because it does not conform to the Hoover Plan, and, I may say, apparently because Oscar Ewing just would turn the Federal Security Administration into a Government Department and in turn make Oscar Ewing, instead of a Federal Security Administrator, a secretary in the Cabinet. There is a good deal of resentment in Congress about that, too, which is likely to raise more political objection, perhaps, to the plans than the one based entirely on logic.

American Medical Association,
Washington Office

CENSUS REPORT SHOWS TIGHTENING UP OF STATE FINANCES.

One underlying reason for states' dependence on federal grants is highlighted in a new Census Bureau report. It shows a reversal of budget trends in 1949; in 1948 and back through the war years income topped expenditures, but this was reversed for the first time in 1949. In that year *income dropped below expenditures by 7.2 per cent*. Increased revenue of 9.6 per cent was overbalanced by a 13.3 per cent increase in expenditures. Expressed in another way, in 1948 income exceeded outgo in 32 states, but in 1949 outgo exceeded income in 33 states. (This *does not mean* the 33 states are in debt; only nine states report their liabilities exceed their assets.)

This reversal took place in spite of the fact that included in the states' revenue are federal grants, which *increased approximately 20 per cent* between 1948 and 1949. The figures are \$1,399,000,000 U. S. grants to states in 1948 and \$1,705,000,000 in 1949. (Direct U. S. payments to individuals are not included in their tabulation. In 1949 these totaled an additional \$3,638,921,248.)

One state, Mississippi, received more money back from the federal government in grants *than it paid in federal taxes* (107 per cent of its tax payments). Other states with a high return ratio are Alabama, 51 per cent return; New Mexico, 58 per cent; Wyoming, 51 per cent; North Dakota, 47 per cent. On the other end of the scale are Delaware with a three per cent return and New York with five per cent. Other low-return states are Illinois, 7.8 per cent; Michigan, 7.55; Ohio, 8.62 and Virginia, 9.72.

A high percentage of federal grants are in the health services field; hospitals, disease control programs, research, aid to the handicapped, old age assistance.

AMERICAN COLLEGE OF PHYSICIANS ANNOUNCES ITS ANNUAL SESSION AT ST. LOUIS APRIL 9-13, 1951

The American College of Physicians will conduct its 32nd Annual Session at St. Louis, Mo., April 9-13, inclusive, 1951. Dr. Ralph Kinsella of St. Louis is the General Chairman and will be responsible for local arrangements and for the program of Clinics and Panel Discussions. Dr. William S. Middleton, President of the Col-

lege, Madison, Wis., will be in charge of the program of Morning Lectures and afternoon General Sessions.

Secretaries of medical societies are especially asked to note these dates and, in arranging meeting dates of their societies, to avoid conflicts with the College Meeting for obvious mutual benefits.

E. R. LOVELAND,
Executive Secretary.

P. S. It may also be noted that the 1952 Annual Session of the College will be held at Cleveland, Ohio, April 21-25, 1952.

EXCERPTS FROM EDITORIAL IN MAY 15TH ISSUE OF THE UNITED MINE WORKERS' JOURNAL

On the medical question, labor had better begin to think, because if resentment of the voters to National medicine in one-third of the States proves as beneficial to reactionary candidates as in the case of Smathers, the problem of repealing the Taft-Hartley Law—so long as both are linked in the Truman program—will be three times as difficult.

Regardless of how lightly President Truman may seek to brush off the Pepper defeat, the fact remains that the over-all resentment against Pepper crystallized as a result of Pepper's all-out support of the Truman program.

Pepper had to bear the brunt of all the fault-finding levelled at the Brannan Plan, foreign aid, give-away money, point four, lowering of tariffs, Government extravagance, "Commie" influence in Government, Kansas City Graft, FEPC, Repeal of the Taft-Hartley Law and, of course, National medicine.

The heretofore unorganized vote, as a result of the Truman Medical Plan, the FEPC, the raging "Commie" publicity and bitterly contested Brannan Plan, was activated into resentful political action as never before—resulting in a record vote.

In 44 years of covering political campaigns in the Nation and in many States, your editor has never witnessed such effective and productive quiet solicitation of votes as demonstrated by Florida doctors, druggists, dentists, hospital staffs, insurance companies and pharmaceutical representatives, aided and abetted by other professional men.

Funds were quietly raised. Golf matches,

poker games, bridge parties and every form of contact which could be conceived and arranged were executed by the medical, drug and hospital fraternity to convince the people that epidemics would be the order of the day, plus bankruptcy, in the event the proposed Truman Medical Plan—which Pepper was supporting—was enacted into law.

Generally speaking, the people in the East, North and West look upon Florida as a State of aged pensioners in need of medical attention that they cannot afford. This is only partially true as affecting the aged. But they do not constitute an appreciable percentage of the voters.

Pepper was up against an unreasoning wall of voters on this question and the more he said in support of National medical aid the more votes he lost.

Pinellas County (St. Petersburg) is the capital of Florida's retired pensioners, yet Smathers carried Pinellas County 18,244 to 15,906 for Pepper.

In contrast to the Pinellas County vote, live-wire, horse-and-dog-racing, night-club Dade County (Miami, Smathers' Home) — which Smathers said he could carry easily by 30,000 majority—was lost by Smathers, the vote being: Pepper 66,803, Smathers, 65,886, according to unofficial returns.

The labor vote showed up in Dade County, while the labor forces were soundly routed in Duval County (Jacksonville, Florida's only industrial city)—which was the fountainhead of money distribution to finance the Smathers campaign — the vote being: Smathers 42,412, Pepper 32,822.

Just how much money was spent in Smathers' behalf will never be known, but Florida campaigns in recent years have proven to be an orgy of spending.

Although the State population does not exceed 2,500,000, belated reports and confessions show that a total of more than \$550,000 was spent in behalf of the successful Gubernatorial candidate in 1948—and, in addition, a greater total was spent in behalf of the candidates in opposition.

The Smathers-Pepper campaign was of longer duration than the Gubernatorial contest and the Smathers newspaper and radio advertising far exceeded that of the campaign for governor—all of which might furnish a clue of how the money bags were loosened up in behalf of Smathers.

The result would be quite interesting and enlightening if some political writer with a flare for statistics would compute the advertising expenditures of the Smathers-Pepper campaigns.

As an aftermath of the campaign, leaders of the CIO and the AFL are busy villifying each other in a name-calling contest in which each

side charges the other with failure to properly support Pepper. The railroaders seem to be taking the result with complacency.

After all is said and done, a simple analysis proves that the Truman program—plus past association with "Commie" leaders — defeated Pepper.

STATEMENT BY JAMES E. PAULLIN, M. D., ON H. R. 6000 SUBMITTED TO THE SENATE COMMITTEE ON FINANCE

February 28, 1950

To identify myself, I am James Edgar Paulin, M. D., of Atlanta, Georgia, a duly licensed physician engaged in the active practice of medicine in Atlanta for the past 40 years. At the same time I have been a part time teacher in the Medical Department of Emory University. I am a member in good standing of our local, state, and national medical societies, and during my years in practice, at one time or another, I have held offices of responsibility in these organizations. I desire to appear before your Committee as a member of the medical profession opposing in particular that part of H. R. 6000, Section 107, which relates to the inclusion among its provisions of total and permanent disability insurance benefits.

In reading the amendments which have been offered to the Social Security Act under H. R. 6000 I was amazed at the recommendations for increased appropriations in money which are requested to be given as benefits under the various titles of the bill, as well as to increase the numbers concerned. So far as I could tell, the requests for money to support this program were increased tremendously, none were eliminated, and none were decreased. Naturally the question arose in my mind as to how all of these benefits could be undertaken without increasing the tax burden on the productivity of our citizens to meet the increasing demands for assistance, and why our citizens are willing to allow Uncle Sam to assume responsibility for their support, education, health, housing, and retirement without the necessity of any effort on their part to produce income from which these taxes are to be paid. I have not given all provisions of the Act careful study, and if I had I would not be competent to offer valid testimony concerning them. However, I do have experience and observations concerning total and permanent disability, which

is Section 107 in H. R. 6000, and which will involve the expenditure of millions upon millions of dollars as a part of the Social Security program.

I do not believe that anyone would oppose rendering assistance to those in dire distress or who are in great need and who are not financially able to help themselves, either because of sickness, injury, or disease. However, the actual need must be established, with a *primary* interest centered on a program which would rehabilitate the person or persons disabled in an effort to make them self-supporting members of society. This must be the chief purpose for which contributions are made for aiding this group of our citizens. To those of us who have been in the active practice of medicine for any considerable number of years, we are aware that there are many psychological factors demanding consideration in any discussion of the determination of the presence or absence of disability.

First, if a tax is levied for the purpose of furnishing total and permanent disability insurance for an individual, and if the individual pays for it for a certain length of time, he develops the feeling that he has a right, under certain circumstances, to demand the benefits which he has purchased. In other words, there is an honest psychological approach on the part of the person with disability insurance to demand support even though he is conscious that he is not totally and permanently disabled. If there is written into the law a clear statement defining disability, either total or permanent, and if the insured does not completely qualify for these benefits, if he sees or hears of some one with no more disability than he has drawing benefits for disability, he makes an earnest effort to effect total disability in order to collect his pay check.

The second psychological effect of disability

is that the patient who claims disability benefits makes an effort to satisfy his own conscience as to the justice of his demands, and he develops subjective symptoms of disease which no one can demonstrate as non-existent. Particularly is this true with certain types of individuals who are, to some extent, emotionally unstable. Such a condition occurs in a higher percentage among women than among men. We as physicians know that disappointments, frustrations, emotional instability, ill-adjusted family life, and various other situational and environmental difficulties will cause in some people a reaction of *defeatism*, with the development of more subjective complaints, which the patient cannot adequately describe, if given an opportunity, in an all day rehearsal of his ailments, and which, if they were the result of disease, would prove fatal before the narrative could be finished.

Third, if a person is insured by the Federal Government against disability and can draw a nice pay check each month for his disability, in a complaining individual as above described, the stage is set for the making of a complete, permanent, 14-carat invalid who is totally disabled, and who will resist with vehemence any and all efforts toward rehabilitation.

Within the past 20 years I think all of us have become conscious that the present trend of society is leading to a steady and gradual weakening, and even disintegration, of our moral and spiritual consciousness, and with it, unfortunately, the deliberate surrendering of individual initiative, ambition, and a desire to succeed in any undertaking, for a paltry mess of pottage served by a paternalistic government. The development of this type of philosophy, among an otherwise healthy citizenship, weakens the very foundation of that type of citizen who has made this government possible, and will greatly increase the demands for government benefits which, in times of stress and strain, will be greatly increased and force our people into a moral state of indolence, and our national economy into a state of bankruptcy.

I ask those of you who visit among your constituents to observe the tremendous increase in the members of our population who are looking for a *position* and not for a job, a position they consider ornamental to a business without the assumption of any tremendous amount of responsibility, and which could be used to enhance

the business because of their supposedly striking qualifications and their ability to draw a nice pay check. Those who seek a job are people who are willing to work, who glory in the accomplishment of a task, and who are happy to be productive. These are few in number. Evidence of this belief can be obtained by spending a few hours visiting any of the employment agencies.

Fourth, physicians have little sympathy with this point of view since they not only work "when willing and able, but also without a contract." They go on call both day and night, irrespective of a national emergency, to render service to the rich, to the poor, and to all of our citizens, regardless of race, creed, or religion. They are conscious of demands which are made upon them, and which will be increasingly made if the provisions of this Act are passed, for certification as to presence of total and permanent disability which does not exist. It takes a physician of considerable stamina to be able to resist some of these appeals. And sometimes they will not do so.

Some 20 or 25 years ago many large insurance companies issued policies on a great number of people, covering them for total and permanent disability. During prosperous times the insurance companies made money on this type of contract. When the sailing became a little rough, a great many physicians will recall, considerable numbers of patients so insured demanded to be classed as permanently and totally disabled so they could retire from business and receive a tax-free income which was sufficient for them to enjoy the art of living without any of the responsibilities, restrictions, or obligations connected with the honorable profession of work. I am not referring in this statement to those patients who obviously suffered a disability which prevented them from working. But I am referring to that large group which developed only subjective complaints, such as nervous disorders, headaches, backaches, rheumatism, angina pectoris, and other disorders which could not in the slightest degree be detected by physical or other examinations. These people, many of them, had persuaded themselves that they were sick and disabled. Many of them could not do the slightest thing, if such was called work, but much could be done under the name of pleasure, such as fishing, skeet shooting, piloting a boat, bird hunting, ten-cent poker, and other pleasures

which would perhaps require no physical exercise but which might increase their blood pressure, and be indulged in without damaging their chances of living provided no work was involved.

The depression, which came along in the thirties, also caused many people in a different financial bracket, insured under a group policy, to seek the security of a permanent and total disability. All of this illustrates the point that when the field is made fertile for the development of dependency on some agency or carrier other than the patient's own efforts, they naturally seek the course of least resistance and demand help from other sources. The experience of life insurance companies, if studied, would be most interesting because I do not believe that the underwriters have been at all successful in removing from their payroll any of those who are collecting for total and permanent disability, except by death, and the mortality is quite low for the disease causing the disability.

It is my belief that unemployment (which is liable to increase in this country) from a psychological standpoint will cause the development of a great many subjective symptoms which could be classed as rendering a patient totally and permanently disabled. It is true that with stimuli such as this, and others, it is almost next to impossible to determine total disability in a patient who has made up his mind and is determined to prove that he is totally disabled in order to obtain a life income from the Federal Government.

A great number of women are employed, some 18,000,000, many of whom probably would qualify for benefits under the proposed program. It is realized by those who are engaged in the practice of medicine that this would be a most difficult group to properly evaluate their claims for disability.

There are other pitfalls which could be brought to your attention, but I believe the idea has been developed from a practical standpoint sufficiently to warn the Congress of what a disastrous step it will be to our national economy to write into the Social Security Act any such program as that recommended in H. R. 6000, Section 107, for total and permanent disability. Social Security funds should necessarily be limited in amount; they represent taxes which are drained from the producers of the nation. Unless there

is some limitation on the fantastic demands for funds, our national economic health will be thrown tremendously out of balance and a fatal condition of shock develop from which there is no recovery.

Since it has been very clearly shown that cash disability benefits diminish the incentive toward rehabilitation, self-reliance, and self-maintenance, which is extremely undesirable, it seems to me that the emphasis, and any consideration which is given to this program, should be focused on rehabilitation. This cannot be done successfully in my opinion under Federal control. All of the states, insofar as I know, have agencies which are capable of handling individuals who claim disability, such as the State Welfare Agencies. These agencies are on the ground. They know of the individual who applies for assistance. They have an opportunity to investigate their worthiness, and they have facilities for rehabilitation. They are also capable of finding work for him or her, and determining whether treatment at home, in an institution, or in other places is the most desirable. Please let them handle it.

I, therefore, respectfully request that this part of the program, Section 107, be eliminated in the Social Security amendment to H. R. 6000 since its adoption, in my opinion, will lead to the development of a considerable number of malingering and semi-invalid individuals among many of our worthwhile citizens. It would mean a further encroachment upon States Rights, and the building up of Federal payrolls which could be used for political influence in the handling of claims. It matters not what safeguards are taken to write into the law those who would be eligible for insurance, all of us know that after a short space of time no attention is paid to this law, just as is happening in other phases of the Social Security program and in the treatment of veterans in VA hospitals. It is common knowledge that veterans with non-service-connected disabilities who are perfectly able to pay for hospital care and medical services are being treated at considerable public expense when the law specifies under what conditions they should be beneficiaries of this service. The same could, in my opinion, happen with those drawing compensation for total and permanent disability benefits.

BOOK REVIEWS

A CENTURY OF MEDICINE IN JACKSONVILLE AND DUVAL COUNTY. By Webster Merritt, M. D. Price, \$3.50. Pp. 220. Illustrations 44. Gainesville, Fla.: University of Florida Press, 1949.

Physicians and laity alike will find in this engaging narrative a most important contribution to Florida's medical and historical lore. With the sure and forthright touch of the true historian, Dr. Merritt presents in panoramic review the fascinating events, towering personalities and progressive movements of the entire nineteenth century as they pertain to medicine in Jacksonville and Duval County. His exhaustive research and painstaking efforts have brought to light in highly readable form history long obscured, owing to loss of official records in the Jacksonville fire of 1901. In sifting out the facts for this entertaining and accurate account, he pictures the physician as community builder and harbinger of progress as well as practitioner of medicine, and his facile pen loses none of the drama of the terrifying yellow fever and other epidemics or the gala events of the times. With equal skill he traces the foundation and early history of the Florida Medical Association and of the Florida State Board of Health.

As related editorially in this issue of The Journal, the author is a brilliant scholar and able historian who has made notable contributions to Florida history in The Journal and in historical publications. His book is profusely illustrated throughout its twenty chapters and makes a valuable addition to any library, particularly that of the physician.

A Contribution To the History of Medicine in Florida

It is with pleasure and with pride that The Journal congratulates the Assistant Editor, Dr. Webster Merritt, on the publication of his book, "A Century of Medicine in Jacksonville and Duval County." Coming off the University of Florida Press early last month, this valuable contribution to the annals of Florida medicine and Florida history marks the successful completion of a monumental undertaking. In its pages live again the dominant figures, events and movements that shaped the medical history of the area from the arrival of the first physician in the closing years of the eighteenth cen-

tury on across the entire span of the eventful nineteenth century. Graphically portrayed are the poignant drama of the terrifying epidemics, strange maladies and weird superstitions of the period. Through twenty carefully documented chapters, the fascinating narrative of the tribulations and triumphs of the courageous pioneers who laid the foundation for sound medical practice in Florida unfolds in appropriate crescendo commensurate with the changing times and the development of the region. Included is the early history of the Florida Medical Association and of the Florida State Board of Health.

From boyhood, Dr. Merritt has cherished deep interest in the history of his native state. His interpretations of that history are familiar to readers of the Florida Historical Quarterly, and also in particular to readers of The Journal through the series of articles on medical history which have appeared from time to time in its columns. He is a former president of the Jacksonville Historical Society and for several years has been vice president of the Florida Historical Society. He has also made notable contributions to medical literature of a scientific nature.

The task of the author in assembling the material for this volume was truly prodigious for it involved gleaning from collections, keepsakes, photographs and clippings of the older generations the obscure record that survived Jacksonville's disastrous fire of 1901. With the gift of the true historian, he has sifted fact from rumor and fable and has preserved for posterity an authentic and absorbing account, profusely illustrated with rare old photographs and drawings, which is of interest alike to his colleagues of the medical profession, the members of allied professions, lay readers and historians.

It is peculiarly fitting that this highly valuable contribution to the history of Florida should come from the University of Florida Press. Born in Gainesville, Dr. Merritt is a distinguished alumnus of the University of Florida. He was its first Groover-Stewart scholar in the College of Pharmacy and recipient of the D. W. Ramsaur Gold Medal for highest averages in all studies; he is an alumni member of the Beta (Florida) Chapter of Phi Beta Kappa. After completing his medical education at The Johns Hopkins University School of Medicine and serving as house officer on the Harvard Medical Service of the Boston City Hospital, he returned



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to Florida in 1936 and has since that time practiced in Jacksonville.

In felicitating Dr. Merritt on the occasion of the publication of his book, *The Journal* expresses the hope that this busy internist and editor will find time to continue his historical pursuits.

Shaler Richardson.

Reprinted from *Journal of the Florida Medical Association*, August, 1949.

NOTICE

On May 2nd, 1950, the allergists of Phoenix and Tucson met for luncheon at the Westward Ho and organized the Arizona Society of Allergists. The following officers were elected:

Honorary President.....E. W. Phillips, M. D.
President.....William B. Steen, M. D.
Vice President.....Eugene Gatterdam, M. D.
The membership consists of:

Phoenix

Doris F. Hopkins, M. D.
Eugene A. Gatterdam, M. D.
John F. McKenna, M. D.
Charles W. Vivian, M. D.
W. A. Woren, M. D.
E. W. Phillips, M. D.

Tucson

J. A. Sutton, M. D.
Redford A. Wilson, M. D.
Hugh C. Thompson, M. D.
John T. Malone, M. D.
F. B. Schutzbank, M. D.
W. B. Steen, M. D.

NEWS ITEM

DR. M. L. SUSSMAN addressed the San Diego County Medical Society on "Non-Tuberculous Lesions in the Lungs." He also served on a Panel which discussed "Aids to Cardiac Diagnosis", before the Annual Meeting of the American Heart Association.

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WOMAN'S AUXILIARY

INAUGURAL ADDRESS

The convention sessions were not only educational but most inspiring, and I cannot help but feel that by now all of us have a very clear picture of our "road ahead."

I want you to know that I am very honored to have been given the opportunity to serve you as your State President. I am not only honored, but very humble in the realization of the tremendous duties and responsibilities the office entails, particularly in this, a most crucial period of the organization's existence. My one hope is to measure up to the high standards set by my predecessor, Mrs. Starns. She has been a most outstanding executive.

The Auxiliary has held faithfully to the five objectives that constituted the basis for its organization, but to these must be added a further objective—that of helping to conquer the formidable problem confronting us today—the problem of government control of medicine. We must ever be mindful that this issue does not pertain to medicine alone; it is something which threatens the economic and political free-



MRS. BENJAMIN HERZBERG

dom of our country. A freedom we have all come to take too much for granted, I am afraid.

It is the prescribed duty of every doctor's wife to be interested and informed and to have a speaking knowledge, not just a reading knowledge of the program propounded by the American Medical Association. With the diverse club associations represented in this group, and the social contacts, if we are informed and interested, and above all united, we can be not only of inestimable value to our doctors, but also a positive force in helping to combat the creeping socialism that is threatening to destroy our American way of life.

You must be aware that the tremendous task to be done in the year to come is not one to fall upon the shoulders of the State and County Board members alone—it is the personal responsibility of every doctor's wife, for this year, more than any other, will necessitate our participation in any endeavor on the request of our Medical Association. Of this you will be made more fully aware when the State program is presented to you in the fall.

I most sincerely and earnestly seek your loyalty and support and I ask that each and every one of you rededicate yourselves to the work of the Auxiliary. The benefits derived from anything you do is commensurate only with the effort, understanding and enthusiasm you put into it. For myself, all I can say is that I shall try to do my very best.

I know you won't let us down, and by joining ranks and working hand in hand in the common cause, this year will be one of personal satisfaction and group accomplishment.

MRS. DOROTHY HERZBERG,
State President.

ANNUAL REPORT 1945-1950

President: Mrs. Charles E. Starns
2934 Croydon Drive
Tucson, Arizona

To the National Officers, Chairmen and Members, The Woman's Auxiliary to the Arizona Medical Association sends greetings and its President submits the following report:

Organization

In the Auxiliary in Arizona there are but four component auxiliaries—in Gila, Maricopa, Pima and Yavapai Counties. The current membership is 347, an increase of 12 over last year. There are in the state 40 members-at-large.

Programs

The programs for the year were planned to

create greater interest and attendance at the regular meetings; to make available to members information relative to the Auxiliary, the Medical Association, the various health agencies, and current proposed legislation which concerns the medical profession and the nation's health; and to emphasize how best the Auxiliary can concentrate its efforts in helping to resolve the issues of the Education Campaign, and further the development of a greater recognition, understanding, and appreciation of American Medicine and of the services and achievements of our doctors.

Public Relations and Health

Each county auxiliary held a "Health Day Program" during the year. Special invitations to these programs were sent to all welfare and social organizations in the respective communities. By means of the newspapers and the radio, the general public was made aware of the nature of the program to be presented as well as informed that the meeting was open to the public and that everyone was urged to attend. For two of the programs the featured speakers were provided by the Arizona Medical Association. Through the efforts of the Auxiliary's Public Relations Chairman in cooperation with the Medical Association's Executive Secretary, arrangements were made for Dr. Ralph Gambell, a former British doctor now preparing for American citizenship and the practice of medicine in the United States, to be sent by the American Medical Association to address those attending the evening meetings held by the two larger county auxiliaries. As public relations projects, these meetings were outstanding.

In each of the counties commendable work was done by members, identified and given publicity as the Medical Auxiliary group, in promoting health projects beneficial to their local communities. Their enthusiastic participation in fund drives of such agencies as the Community Chest, the Red Cross, and the Cancer Society, and in the sale of Christmas and Easter seals brought such excellent results and favorable public comment from leaders of the organizations' drives that the public relations value of these activities is obvious.

National Education Campaign

Efforts were made within the auxiliaries to so educate the members that individually they could informally dispense authentic information on the subject of the Campaign to their associates, one at a time or in small groups as occasions arose, as well as through programs and projects they might be able to help plan and execute in other women's organizations of which they are members.

Early in the summer of 1949 the county auxiliaries began the distribution of available pamphlets from Campaign headquarters among the

women's groups of their communities. This was followed during the year by other informative material relative to Compulsory Health Insurance and similar socialized medicine plans tried by other nations. The State Auxiliary purchased and sent to the presidents of the most representative of women's organizations, both on the state and county levels, a copy of Flynn's *Road Ahead*. To these same groups, packets of material were sent which included reprints of such outstanding articles as James Byrne's *First Things First*, the Stasson series of contributions to the *Readers' Digest*, and the *Look* article on the American Medical Association. A personal letter from the State Auxiliary President went out to each of these organizations pointing out the vital importance of the issue which prompted the writing of these articles, reminding the group leaders that the socialism of medicine is but one of the initial steps toward the complete socialization of the government, and urging that this subject be given a place on the study agenda of the group at a very early date. Resolutions were asked for and in some cases were made as requested, but greater emphasis was placed on securing an opportunity for individual education of the group's members relative to the implications of the controversial measure than in obtaining the organization's resolution endorsing the opposition to the passage of the measure. The responses received relative to the use of the materials sent in special programs, in debates, etc., were most encouraging.

Philanthropic

The philanthropic activities in the auxiliaries included extensive participation in local charities, making donations of time and money to local health agencies, providing needed furnishings for the Children's Home, raising funds for school health councils and in purchasing valuable equipment for the local hospitals.

Student Nurse Loan Fund

During the year sufficient money was collected in this fund to make interest-free loans to two young women to finance their three-year nurse-training course. This fund is administered by a committee of nine auxiliary members.

Legislation

Pending and proposed legislation affecting health and the practice of medicine was on the study agenda of the county auxiliaries. Auxiliary members and the state and county auxiliaries as organizations have communicated, in personal letters and telegrams or by formal resolutions, with members of the Congress relative to legislative measures in which we are so vitally interested. The officers, the legislative committee, and the members individually exerted their influence on members of the state legislature in a successful effort to secure a much needed additional appropriation for the Child Colony, an institution for the care and rehabilitation of mentally deficient children.

History

The record of the state historian is complete to date.

Today's Health and Bulletin

Subscriptions to these two periodicals showed an increase over the preceding year but still were far short of the expectations of the respective chairmen.

Publicity

Local newspapers were most cooperative in printing on their women's pages accounts of the constructive activities of the state and county auxiliaries. *Arizona Medicine*, sent to every doctor's wife as well as to each doctor's office, provided the Auxiliary with space for all articles and items of direct interest and import to present and potential auxiliary members.

The state president and three delegates represented the auxiliary at the National Convention in Atlantic City. The president-elect attended the National Conference of State Presidents and Presidents-Elect in Chicago. The president and the president-elect paid official visits to each of the county auxiliaries. Regular contacts with the auxiliaries and with the members-at-large was maintained by the president through individual letters and form-letter correspondence.

Respectfully Submitted,

Mrs. Charles E. Starns,
1949-1950 President.

